

# Understanding cosmeceuticals

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## Abstract

Cosmeceuticals are over-the-counter topical skincare products that contain biologically active ingredients. A wide range of products are available in the market and therefore, dermatologists, should possess a profound understanding of these to advise patients on appropriate formulations. Furthermore, incorporating dermocosmetics into treatment regimen can improve acceptability of the treatment plan and adherence. However, all products available in the market may not benefit patients and understanding how to decide on a particular product is of paramount importance.

**Key words:** cosmeceutical, dermocosmetics, anti-aging, acne, skin-lightening

## Introduction

The word, cosmeceutical, implies to the consumer a product purchased without prescription that profoundly affects skin appearance and functioning<sup>1</sup>. Albert Kligman introduced the term "cosmeceutical" in 1984 to describe the range of products that do "more than coloring the skin and less than a therapeutic drug"<sup>2</sup>. These products are formulated with lower concentrations of active ingredients than prescription products and are consequently classified by the FDA as "cosmetics" instead of drugs. Due to this classification, cosmeceuticals are not required to undergo rigorous safety or efficacy testing prior to entering the marketplace<sup>3</sup>. In Sri Lanka, under the Drug Regulatory Authority Act No. 05 of 2015, cosmeceuticals are classified under borderline product and criteria such as the intended use, mode of action, the therapeutic claims made by the manufacturer (ability to treat or prevent diseases.), presence of pharmacologically active substances and their concentration are taken in to account to classify them in to one of three categories: Schedule I - General sales products - Not necessary retail sales license/Schedule IIA - no prescription but sale by pharmacy/Schedule IIB - prescription required. This indicates the public the level of risk associated with the product<sup>4</sup>. Nevertheless, in the market there are many products previously imported as cosmetics escaping any stringent scrutiny.

**Why it is important to know about them:** A plethora of dermo-cosmetic options are available in the market, hence the treating physicians should be well equipped with in-depth knowledge on these to advise patients on products suitable for their skin<sup>2,5</sup>. They can be adjuncts to standard pharmacotherapy and help to reduce the incidence of side effects such as dryness, irritation, and photosensitivity. Furthermore, a dermatologist-directed skin care regimen instils an impression on the patient that there is a strong professional interest in the management of the patient's condition, lessens the confusion in patients when choosing their regimen and will prevent them from using nonprescription products with false claims and prevent wasting their money<sup>6</sup>.

**Types of cosmeceuticals and uses:** Cosmeceutical product formulations have diversified from facial skin to body to hair and they are used for the treatment of various conditions like hair damage, wrinkles, photoaging, skin dryness, dark spots, uneven complexion, hyperpigmentation, acne and so on<sup>7</sup>. Cosmeceutical regimens incorporate cleansers and moisturizers as the backbone of the therapeutic regimen<sup>1</sup>.

**Facial cleansers and toners:** Cleansing are a basic skin activity resulting in the removal of sweat, sebum, bacteria, fungal elements, desquamating corneocytes, and environmental debris from the skin surface. The most important consideration in cosmeceutical cleansers is mildness. A cleanser must find a balance between removing skin soils for hygiene purposes and minimizing skin barrier damage<sup>1</sup>. Cleansing scrubs are a common part of the cosmeceutical cleansing routine used for cleansing and exfoliation purposes. The formulation contains particulates and surfactants designed to mechanically exfoliate either the face or body. Traditional surfactants are combined with aluminum oxide, ground fruit pits, polyethylene beads, or sodium tetraborate decahydrate granules to form a suspension<sup>1</sup>. The particles are manually massaged into the skin, dislodging desquamating corneocytes, literally sanding the skin, and improving skin visual smoothness, tactile softness and increasing light reflection and thereby improving

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luminosity and radiance of the skin. Typically, the scrub is used once weekly; however, more frequent, or aggressive use can cause skin barrier damage and skin sensitivity<sup>1</sup>. All patients with acne should be educated on the use of cleansers because these agents have been found to promote compliance to treatment. Facial washing with cleansers has also been found to reduce both inflammatory and noninflammatory lesions when done twice daily<sup>5</sup>. The regimen and the choice of the cleanser should be suited to the patient's skin profile. Therefore, scrubs or other mechanical treatments should not be suggested in patients who are known to have sensitive skin<sup>5</sup>. Furthermore, products that contain allergens, such as fragrances and preservatives, should not be used by susceptible patients i.e., history of allergic contact dermatitis<sup>5</sup>. Controlled studies have shown efficacy of combinations of sodium laureth carboxylate and alkyl carboxylates for mild to moderate grade facial acne and that triclosan, salicylic acid, and azelaic acid-based cleanser reduced both inflammatory and noninflammatory acne lesions<sup>5</sup>. Ideal acne cleansers are those that are noncomedogenic, non-acneogenic, hypoallergenic, and nonirritating to the skin recommendation is to provide mild cleansers with slightly acidic or neutral pH, are alcohol free, nonabrasive, can be easily rinsed/are residue free, optionally contain benzoyl peroxide or salicylic acid, and to be used twice daily<sup>5</sup>. Benzoyl peroxide possesses antibacterial and comedolytic benefits and can suppress the development of resistant acne organisms when used in cleanser form. Salicylic acid is also used as an active ingredient in OTC acne cleansers in concentrations up to 2%<sup>1</sup>. Thus, providing monographed acne ingredients in a more cosmetically elegant form than prescription drugs may improve compliance, consumer acceptance, and efficacy<sup>1</sup>.

Toners, also known as astringents, are liquid cosmeceutical formulations designed for facial application in place of detergent cleansing or after detergent cleansing and they work through solvency of skin soils. Oily skin astringents contain a high concentration of alcohol, thus removing any sebum left behind after prior cleansing and producing a clean, tight feeling many consumers find desirable. Dry skin formulations contain largely propylene glycol and water to act as a humectant moisturizer. If a good cleanser is selected, it is not necessary to incorporate a toner into a cosmeceutical skin treatment regimen. Thus, toners are optional and not functionally necessary cosmeceuticals<sup>1</sup>.

**Topical sebum control agents and comedolytics:** The only proven way to decrease sebum production is

with oral retinoids and anti-androgens and generally after 15-20 minutes of washing the face a fresh sebum coat is formed on the skin<sup>6</sup>. However, mattifying agents found in topical sebum control products have been shown to absorb and retain sebum, correcting the oily, or shiny appearance of the skin as well as decrease the risk of formation of comedones and inflammatory acne lesions. Results of a few in vivo and clinical studies have shown the sebum reducing activity of retinoids, specifically adapalene, as well as low dose clindamycin, nicotinamide, benzoyl peroxide, azelaic acid, zinc compounds, and L carnitine. Topical corneolytics, such as retinaldehyde, retinol, alpha hydroxy acids (e.g., glycolic acid), beta hydroxy acids (e.g., salicylic acid), and polyhydroxy acids (e.g., lactobionic acid and gluconolactone) found in low concentrations in a wide variety of over the counter formulations, have comedolytic and skin-lightening effects. Salicylic acid formulated at pH 6.50 induced relatively no stinging compare to a formulation at pH 3.12<sup>5</sup>.

**Moisturizers:** Moisturizers are a key component of every cosmeceutical regimen, providing reduced trans-epidermal water loss that results in skin with fewer fine lines of dehydration, coats the skin with friction reducing substances accounting for skin smoothness, and places a fine film of light-reflecting particles on the skin surface to increase radiance and luminosity<sup>1</sup>. Moisturizers specifically made for acne vulgaris therapy were found to improve the tolerability by decreasing the dryness and stinging sensation associated with barrier disruption, and they are best applied initially before other topical agents to improving compliance to treatment. Dimethicone and glycerin were found to be the most commonly utilized agents as they can reduce transepidermal water loss. Hyaluronic acid and sodium pyrrolidone carboxylic acid are used in addition to counterbalance the stickiness of glycerin. Some botanical components have putative-anti inflammatory effects, for example, witch hazel and aloe vera while some metals, for example, zinc are added for their anti inflammatory or wound healing effects<sup>5</sup>. The ideal acne moisturizers should be non-comedogenic, nonacneogenic, hypoallergenic, nonirritating, and is compatible with the patient's treatment regimens. Moisturizers are often incorporated in cleansers and photoprotecting agents<sup>5</sup>. The general recommendation is to use water-based and nongreasy moisturizers once daily (i.e., in the morning for photoprotecting moisturizers) or as often as deemed necessary by the treating physician for sensitive skin to strengthen the skin barrier with barrier repair moisturizers and non forming cleanser with help entry of allergens and irritants<sup>6</sup>.

**Photo protecting and lightening bleaching agents:**

Skin-lightening cosmeceutical moisturizers are popular because facial dyspigmentation is universally associated with photoaging but more common among people of skin of colour and is associated with significant psychosocial impairment. For more than half a century, hydroquinone, a potent tyrosinase inhibitor, in low concentrations (2%) had been the gold standard over the-counter (OTC) treatment for dyspigmentation<sup>8</sup>. However, in Sri Lanka none of the retail products contained hydroquinone. Due to controversies surrounding hydroquinone, The need for an alternative skin lightening agent has led to enhanced research and development of some of the currently widely available ingredients in cosmeceuticals, such as topical retinoids, vitamins C and niacinamide, kojic acid, N-acetyl glucosamine (NAG), liquorice extract and arbutane are to name a few of long list<sup>8</sup>.

In our practice we are aware that the most potent and sometimes the only effective depigmenting agent is hydroquinone in a strength of 4% or more. Therefore, for conditions like Melasma a regime consisting of meticulous sun protection over vitamin C serum in the morning with combination of hydroxy acid cleanser that works as an exfoliant with a Kligman formula product (retinoid, hydroquinone and mild steroid) at night would give good results. Other tyrosinase inhibitors are kojic acid, arbutin, mulberry extract and they take up to 12 to 16 weeks applied twice daily to show results. However, after 16 weeks tachyphylaxis would be evident and hence it is important to have a drug holiday of at least one month<sup>6</sup>. During this period a retinoid, hydroxy acid and a PAR-2 blocker such as (niacinamide, activated soy) could be used<sup>6</sup>. The ability of a cosmeceutical to lighten skin must be evaluated on product-by-product basis. Some may have been clinically tested to demonstrate efficacy whereas others may make soft claims based on including a certain ingredient<sup>1</sup>.

Not only for pigmentary disorders and antiaging but even for acne patients with risk of PIH sunscreens are strongly recommended. Sunscreens are strongly recommended in acne patients at high risk of post inflammatory hyperpigmentation. UV blocking agents typically contain titanium dioxide and zinc dioxide, which provide physical filtering against UV light and tend to be chalky in consistency. UV absorbing agents (e.g., avobenzone), on the other hand, are chemical agents commonly found in an aqueous base. Because of this, patients of ethnic origin with oily skin and acne prefer UV absorbing

sunscreens because of their cosmetic acceptability. Adding pigment to a physical sunscreen that is of nano particles of titanium dioxide or zinc oxide may be an option although less desirable. Application of dermocosmetics with a skin bleaching component (e.g., azelaic acid, hydroquinone) in combination with a photoprotecting agent (e.g., dioxybenzone, oxybenzone) may improve patient compliance in skin phototype above IV<sup>5</sup>.

Cosmetic camouflage aims to disguise disfiguring skin lesions by improving the appearance of the skin. An ideal acne camouflage should have a natural appearance, be nongreasy, noncomedogenic, and can be easily applied. Cosmetic camouflage agents should be avoided in patients with active AV as the occlusive effects of some of their ingredients (e.g., talc) may aggravate acne. However, in exceptional situations, it may be used as an adjunct to overcome psychosocial effects of AV lesions and scars as well as to improve dermatology-specific quality of life<sup>5</sup>.

For patients undergoing procedures such as Chemical peels: Many adjunctive agents (AHA BHA retinoids skin bleaching preparations can be used to enhance chemical peels and decrease the incidence of PIH. Moisturizer containing AHAs and BHAs can be used for 2-3 weeks before a superficial or medium depth chemical peels. These agents cause thinning of stratum corneum and thereby creating a more uniform cutaneous surface and allowing for deeper penetration of the chemical peeling agent. Retinoids also are superior pre-peeling agents. However, to minimize irritation they should be discontinued for one week following peel. Combination of chemical peels with topical bleaching agents (hydroquinone, kojic acid, ascorbic acid, niacinamide) has been shown to be effective in treating hyperpigmentation<sup>9</sup>. For patients undergoing ablative laser treatment, retinoids are best applied nightly for at least 2 weeks and optimally for 3 months before and discontinued one week prior to procedure<sup>9</sup>. Post procedural inflammation can be reduced by antioxidants and anti-inflammatory agents including various barrier repair moisturizers (epidermal lipids such as ceramides/ humectants such as hyaluronic acid and occlusives for patients with very dry skin) vitamin C, E, niacinamide which plump the barrier and also have anti-inflammatory properties<sup>9</sup>. Post botulinum toxin as an adjunct to the IM botulinum toxin, 10% acetyl hexapeptide-3 as a topical has shown to decrease the depth of periorbital rhytids can be used<sup>9</sup>. Topical hyaluronic acid may compliment injectable filler treatment<sup>9</sup>.

**What you need to know:**

- When do I prescribe a derma cosmeceutical? Incorporate in to the acne, anti-pigmentation or anti-aging regimen as moisturizers, cleansers etc. tailored to individual patients profile.
- How do I decide on a product? Make sure the active ingredients their concertation and formulation can deliver the claims made by the manufacturer.
  - Only certain active ingredients in the correct concentration would have the purported effect. (esp. Retinoids and Vitamin C)
  - Formulation and pH is important for tolerability and bioavailability (Especially important for Vitamin C preparations/AHAs)
  - Pay attention to the size/nanoparticles etc.: Hyaluronic acid larger molecules are not absorbed thought the epidermis
  - Get to know the active ingredients that constitute patented products for e.g. saber white, bio shield etc.
- If you wish to use it long term, ideally do a literature search to find if there is any basis for the claims made.
- Follow up patients and observe effect of treatment. May realize listed ingredients unlikely to have the observed effect: e.g. seeing side effects of steroids in cream consisting of Vitamin C and glutathione (Testing of ingredients not done by regulatory body).
- The annexure has a list of some commonly available products in the local market and their ingredients.

**What you need to know about Ingredients**

**Sunscreens:** Sunscreens can be broadly categorized functionally into absorbers and reflectors, which are comprised of organic chemical compounds (benzophenones, avobenzone, ecamsule, methyl antranilate, salicylates, cinnamates, etc.) and the inorganic metal particles. Organic compounds absorb solar UV radiation and dissipate it by means of a series of exothermic reactions or high wavelength (therefore low energy) irradiation into the surrounds. Avobenzone has the best safety profile amongst all sunscreen ingredients but its photo-instability and incompatibility with metal oxide sunscreen ingredients renders it an unpopular choice until the issues are negotiated by the combination with benzophenones that confer photo-stability; Avobenzone is a highly effective UVA absorber with UVB coverage (290-400 nm). benzophenones have several safety issues including risk of contact dermatitis. Titanium dioxide and zinc oxide as nanoparticles have been developed in an attempt to mitigate white streaks in cosmetically sensitive areas on skin, but fear for possible systemic absorption through the skin exists<sup>8</sup>.

**Retinoids:** Prescription products contain the biologically active ingredient retinoic acid, also known as tretinoin. Cosmeceutical vitamin A

ingredients include retinol, retinaldehyde, and retinyl esters. Retinol and retinaldehyde has strong evidence supporting its efficacy in improving lines, wrinkles, pigmentation, elasticity, firmness, brightness, and overall photodamage. Multiple studies also report retinol causes less irritation than retinoic acid (tretinoin) but is considered 10 times less potent. Retinyl palmitate is the most stable of the vitamin A esters and can be easily incorporated into the oil phase of creams and lotions, due to its lipophilic nature; however, retinyl palmitate has low biological activity<sup>1</sup>. Retinyl esters are unlikely to have any significant effect on pigmentation<sup>10</sup>. The least effective concentration for retinol and retinaldehyde are 0.25% and 0.05%, respectively<sup>3</sup>. In patients who find it hard to tolerate retinoids, the lowest over the counter retinol strength such as 0.025% can be applied as pea size amount every third day for two weeks and then increased to every night of two weeks further increase can be done to 0.05% tretinoin and then to prescription strength 0.1% tretinoin or adapalene<sup>6</sup>.

**Ascorbic acid:** Vitamin C functions as an antioxidant, a tyrosinase inhibitor, and a co-factor in elastic fiber cross-linking and collagen synthesis. L-ascorbic acid, the most biologically active form, has strong clinical evidence supporting efficacy in fighting UV-induced generation of free radicals and improving dis-

coloration and pigmentation<sup>3</sup>. Sunscreens are only partially efficacious for blocking free radicals released upon UV exposure and Vitamin C works synergistically with sunscreens to enhance their photoprotective effect<sup>10</sup>. The most stable formulation of vitamin C is L-ascorbic acid with a pH of 3.5, as acidity improves its penetration and stability. Vitamin C is most efficacious at concentrations >8% and at concentrations >20% was found to cause irritation<sup>10</sup>. Unfortunately ascorbic acid is expensive to formulate properly for this reason ascorbic acid is more expensive than other skin care products, but the benefit justify the increased cost<sup>6</sup>. Some products use more stable derivatives of vitamin C such as magnesium ascorbyl phosphate and ascorbyl palmitate which are believed to convert into ascorbic acid after absorption. Other common vitamin C derivatives include disodium isostearyl 2 to 0 L-ascorbyl phosphate, ascorbic acid sulphate and tetra-isopalmitoyl ascorbic acid. In order to improve stability, Vitamin C is packaged in opaque, air-tight bottle<sup>3</sup>.

**Vitamin E**, probably functions more as an emollient in most cosmeceutical formulations than an active physiologic antioxidant<sup>1</sup>. However, adding ferulic acid (a botanical chemical, a potent phenolic antioxidant found in plants) to vitamins C+E combination increased its efficacy in protection against UV-induced photodamage by fourfold<sup>10</sup>. There are several studies that support a Vit C/E + FA formulation in the prevention and treatment of UV-induced erythema and pigmentation, and in wound healing. Based on available evidence, the most effective concentration for formulation appears to be 15% vitamin C, 1% vitamin E, and 0.5% ferulic acid<sup>3</sup>.

**Niacinamide** has moderate evidence supporting its efficacy in reducing UV-induced fine wrinkles, roughness, erythema, inflammation, and hyperpigmentation. A concentration of at least 4% niacinamide appears necessary to deliver notable results<sup>3</sup>. Niacinamide (like soy protein extracts) acts via protease-activated receptor 2 (PAR-2). Inhibition which reduces melanosome phagocytosis by keratinocytes leading to reduced melanin transfer leading to reduced skin pigmentation.

**Kojic acid**: Based on available evidence, kojic acid has strong evidence in treating hyperpigmentation when used in combination with other agents. Results are comparable to hydroquinone creams. Kojic acid is typically found in concentrations of 1-4% and is tolerated well. However, there is a scarcity of studies that evaluate kojic acid monotherapy<sup>3</sup>. Due to its side effect profile it is not commonly found in popular retail cosmeceuticals<sup>10</sup>.

**Hyaluronic acid (HA)**, another molecule that decreases with age, is known for its moisture retention properties. One gram of HA can hold up to 6L of water. HA is found in the dermis and functions in the production of extracellular matrix, epidermal cell interactions, and cellular immunity. These properties of HA make it an appealing product for restoring a youthful appearance to skin. HA is one of the most advertised ingredients in skincare products for its hydrating and anti-wrinkle effects. Based on available literature, these claims are valid. HA has clinical support for improving skin hydration, elasticity, firmness, wrinkles, and roughness. Endogenous hyaluronic acid is a large molecule which may have trouble penetrating the epithelial barrier, but lower molecular weight HA (130 and 50kDa) and nanoparticle-sized HA can overcome this limitation<sup>3</sup>.

**N-acetyl glucosamine (NAG)**, a precursor molecule to hyaluronic acid, which is an extracellular matrix component known collectively as glycosaminoglycans (GAGs). Works by inhibition of the activation of melanin-producing enzyme tyrosinase, also a strong humectant due to its hydrophilic molecular structure. Has limited evidence in the form of topical use of 2% NAG results in reduction in facial hyperpigmentation and more so when combined with 4% niacinamide<sup>8</sup>.

**Alpha hydroxyl acids (AHAs)** are amongst the first to be discovered and developed for skin rejuvenation and in low concentrations (less than 20%), they normalize epidermal layers by thinning stratum corneum whilst promoting thickening of granular layer. Polyhydroxy (PHA)/bionic acids were subsequently developed that would rectify the irritating effect of alpha hydroxy acids on skin, whilst retaining their skin rejuvenation effects<sup>8</sup>.

**Tranexamic acid (TXA)**: Although earlier studies do not support the use of topical TXA for treating melasma, newer studies suggest that it is, in fact, as effective as hydroquinone<sup>3</sup>.

**Arbutin** is a botanical ingredient extracted from the bearberry plant and is used in a variety of products manufactured in Japan and is a common pigment-lightening ingredient in many cosmeceutical formulations marketed in the United States. The tyrosinase inhibitor deoxy arbutin inhibits tyrosine hydroxylase in a dose dependent way, inhibiting melanogenesis hence its use in skin-lightening of hyperpigmented skin<sup>10</sup>. 3% being commonly used in common cosmeceuticals, beyond which concentration there are reports of post-inflammatory hyperpigmentation<sup>8</sup>. It is less effective than kojic acid.

Resorcinols are effective tyrosinase inhibitors. 4-n-Butylresorcinol, is a derivative of resorcinol and has been used in depigmentation treatment with invitro studies showing that it is more potent than hydroquinone, but more studies are needed.

There is limited evidence supporting the effects of topical licorice root extract, mulberry extract, aloesin, ellagic acid, polyphenols, soybean extract, and turmeric.

Cosmeceutical products advertise topical collagen for restoring a youthful face with the idea that the topical collagen will be absorbed by the skin. No clinical studies evaluating the effects of topical collagen and being a large molecule, direct absorption via topical application is unlikely<sup>1</sup>. Currently there are no peer-reviewed clinical studies investigating the efficacy of stem-cell extracts in skincare products<sup>3</sup>. Most of the stem cell products on the market are derived from plant sources and are not able to function as human stem cells<sup>12</sup>.

## Conclusion

As an expert on skin care all dermatologists should be well equipped with the knowledge to help our patients select suitable cosmeceutical preparation according to their skin type, skin condition for which they are following treatment and spending power. Furthermore, recommendations on how to incorporate them into the daily skin care regimen would improve compliance with the treatment regimen. Looking through the ingredients of products (listed in the annexure) you may understand the unsubstantiated nature of the claims made. This article is by no way an exhaustive review of ingredients or products available in the market but an attempt to stimulate the interest in the subject.

## Acknowledgment

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## Annexure

### Some cosmeceutical products found in Sri Lanka

All brand representatives were requested to provide with the details such as the list of their products and ingredients with the concentrations and pH.

Product name	Claim	Ingredients	Cost/ country of origin
Ultra glow face lightening cream	Lightening cream	Kojic acid 1.5%, Retinol 0.01%, Stearic acid 2%, Sodium ascorbyl phosphate 1% <b>pH 5.7%</b>	Sri Lanka Rs 2870/- (50g)
Glow ultra body lightening lotion	Body lightening lotion	Alpha arbutin 1%, Glycolic acid 2%, Vitamin C 0.6%, <b>pH 5.8%</b>	Sri Lanka Rs 1650/- (200ml)
Biluma	Skin brightening cream	Kojic acid 2% Dipalmitate 0.5%, Arbutin 1%. Tocopheryl acetate 0.5%, Sabi white (tetrahydrocurcumin), Licorice extract 40%, Artocarpus extract, (oxyresveratrol 95%)	India (license Switzerland) Rs 3060/- (15g)
Ultimate W+ whitening cream	Skin lightening	[meso]white complex® (Niacinamide, Kojic acid, Tocopheryl acetate), Ascorbyl Glucoside, Lepidium sativum extract	Spain Rs 12,900/- (50 ml)
Energy C intensive cream	Skin Brightening	Ascorbyl Glucoside, Osiflirt (Oat Kernel Extract), Vitamin E	Spain Rs 12,900/- (50 ml)
Radiance DNA intensive cream	Anti-aging	[meso]recovery complex® Hyaluronic acid, Phospholipids with a Lamellar structure	Spain Rs 12,500/- (50 ml)
Neostrata gel plus	Antiaging and improves texture	15% Glycolic acid	USA Rs. 4,355.00 ( 125ml)
Neostrata brightening eye cream	Targets visible dark circles Formulated to brighten and firm the look of tired eyes	Gluconolactone 3% Lactobionic Acid 1% Peptide Blend Pro-Vitamin A and Vitamins E and C Yeast Extract	USA Rs 5300/- ( 15g)
Neostrata pigment	Brightening and reduces uneven tone	N-Acetylglucosamine (NeoGlucosamine®) 4% Retinol 0.1% Sabi white (Turmeric extract) Vitamins C and E Swiss alpine plant extracts (GigaWhite®)	USA Rs. 5,625.0 (50ml)
Neostrata Illuminating serum	Brightens and clarifies	Niacinamide 4% NeoGlucosamine Peptide (?) Licorice Extract Gigawhite Vitamin C (?) pH (?)	USA Rs 6150 (30ml )

Product name	Claim	Ingredients	Cost/ country of origin
Neostrata bionic face serum	Antiaging and improves texture	Lactobionic Acid (PHA)10% Pro-Vitamins A, C and E (?)	USA Rs 5850/- (30ml )
Neostrata bionic face cream	Antiaging and improves texture	Gluconolactone 8% Lactobionic Acid 4%	USA Rs 4,425.00 (40g)
Capiwhite night cream	Lightening, for pigmentation	Hydroquinone 2%, Kojic Acid 1% Glycolic acid 1.5%, Sunflower oil 5% Sodium ascorbylphosphate 0.1% Tocopherol 0.3% Allantoin 0.5%	Canada 4526.00 (30ml)
Capiwhite RC	Lightening, for pigmentation	Arbutin, Butyrospermum parkii (shea butter), Octadecenedioic acid, Glyceryl stearate, Stearic acid, Sodium hyaluronate, Hydrolyzed jojoba esters, Rumex occidentalis extract. Allantoin, Tocopherol, Cera alba (beeswax/cire d'abeille), propylene glycol.	Canada, Rs 3837.50 (30ml)
Capiderma moisturizing face cream	Moisturizer	Hyaluronic Acid 1% Shea Butter 3% Sunflower Oil 5% Sodium ascorbylpalmitate 0.1% Coviox T-70TM (Tocopherol) 01%	Canada Rs 3193.60 (40ml)
Capiderma Anti-Wrinkle cream	Anti aging	Glycerin, Sodium ascorbyl phosphate, Steareth-21. Hydrolyzed jojoba esters, Retinol. Allantoin, Algae extract, Sodium hyaluronate, Palmitoyl oligopeptide, Palmitoyl tetrapeptide-7, Tocopherol	Canada Rs.3795.00 (30ml)
Capiwhite body milk	Lightening	Glycolicacid, Hydroquinone, Steareth-21, Dimethicone, Pisum sativum (pea) extract, Propylene Glycol, Tocopherol, Socrose dilaurate, Magnesium aluminium silicate, Polysorbate 20, Xanthan Gum, Steareth	Canada RS. 4007.50 (150ml)
Neoretin discrom control gel cream SPF 50	Depigmenting Retexturising Regulation of melanin production Sun protection UVB-UVA (SPF 50)	Hydroxypinacolone Retinoate 0.1% Retinol glycospherers 1% Kojic acid 3% ChromaBright 0.5% Natriquest 0.5% Niacinamide	CANTABRIA LABS SPAIN. Rs. 5,825.00 (40ml)
Neoretin discrom control serum booster fluid	Depigmenting Retexturising Regulation of melanin production High tolerability	Hydroxypinacolone Retinoate 0.1% Retinol glycospherers 1% Niacinamide 4% + N-Acetyl Glucosamine 2% Kojic Acid (free nanocapsules) 4.8% Natriquest 0.5%, Alistin + Albatin 0.5% + 1%, Salicylic Acid 0.15%	Cantabria labs SPAIN Rs. 6,175.00 (30ml)
Neotone Serum (30ml)	Treatment of pigmentation spots	Glycolic acid 6%, Niacinamide 3% Trimethoxybenzyl acetylsinapate 1% Salicylic acid 0.5%, Glycyrrhiza glabra (licorice) root Extract 0.01% Diacetyl boldine (lumiskin) 4%	France Rs 3840/- (30ml)



Product name	Claim	Ingredients	Cost/ country of origin
Neotone radiance SPF50+	Treatment of pigmentation spots	Homosalate (7%), methylene bis-benzotriazolyl tetramethylbutylphenol [nano] (4%), Butyl methoxydibenzoyl methane (3%), niacinamide (3%), bis-thylhexyloxyphenol methoxyphenyl triazine (2%), Trimethoxybenzyl acetylsinapate (1%), Melanin (0.5%), biosaccharide gum-4 (3%), Glycyrrhiza glabra (licorice) root extract (0.01%), Diacetyl boldine (4%)	France Rs 4410/- (30ml)
Vivier serum 10/20	Improves the appearance of fine lines and wrinkles. Enhances skin clarity	Patented L-Ascorbic acid USP 10% / 12.5% (Vitamin C) Grape fruit extract Optimal pH between 2.4 and 3.2	Canada 30ml 10 -11,191/- 20 -15,450/-
Vivier serum radiance	Improves the appearance of fine lines and wrinkles. Enhances skin clarity	Patented L-Ascorbic Acid 8% (Vitamin C), Arbutin, Resocinol Optimal pH between 2.4 and 3.2	Canada 30ml Rs 15,795/-
Gene skin C premium	Radiance booster – Anti-aging	Ascorbyl glucoside 20% Superoxide dismutase 0.5% Retinyl palmitate 0.2% Tocopheryl acetate 0.5% Helianthus annuus (sunflower) seed oil, tocopherol, acetyl hexapeptide-51 amide 2%	France Rs 8400/- (10 ml)
Fluidbase rederm 8% AHA gel forte	Collagen and elastin synthesis	Glycolic acid Propylene glycol Lactic acid Ammonium hydroxide linalool Coumarin limonene eugenol Geraniol citral citronellol	Spain Rs 4690 -(30ml)
Fluidbase rederm 10% AHA gel forte	Collagen and elastin synthesis	Glycolic acid Lactic acid Ammonium hydroxide Cetyl palmitate Glyceryl stearate	Spain Rs. 7990 - (250ml)
Fluidbase rederm 15% AHA gel forte	Collagen and elastin synthesis	Glycolic acid, Propylene glycol Lactic acid Diazolidinyl urea Methylparaben Imidazolidinyl urea Propylparaben Coumarin – Citral Citronellol	Spain Rs. 4790 - (30ml)
Fluid base rederm retinol Vitamin C cream	Anti-Aging Moisturizing Cream	Ascorbyl glucoside Retinyl palmitate Cetyl palmitate glyceryl stearate <b>pH 4.5 - 5.2</b>	Spain Rs. 6990 - (30ml)
Fluid base lightning gel	Skin Pigmentation	Arbutin, Ascorbyl glucoside, ND PEG/PPG-14/4 Dimethicone ND Dimethylmethoxy Ascorbyl palmitate Retinyl palmitate Tocopherol chromanyl palmitate, <b>pH 4.5 - 5.2</b>	Spain Rs 5790 - (30ml)

Product name	Claim	Ingredients	Cost/ country of origin
Melaklyr	Anti melasma cream	Vitamin B3 1% Microfine Titanium Dioxide 0.7% Aloevera Extract 2% Avobenzone 0.5% Oxybenzone 2% Octyl methoxycinnamate 2.5% Magnesium Ascorbyl Phosphate 5.2% <b>pH 6.0</b>	Developed In USA, Manufactured in Pakistan Rs 3360/- (30g)
Glutazol C	Skin whitening and lightening cream	L-Glutathione (5%w/v) Vitamin C (5%) (Ethyl ascorbic acid), Alpha arbutin (1%), Lumiskin peptide (1%), Sepicalm S (1%) Glycine, Glutamic acid, Aspartic acid, Alanine) (1%) Nano white complex 2% (Lecithin, Arbutin, Linolenin acid, Tocopherylactate, Ascorbyl palmitate, Glutathione)	India Rs 3890/- (50g)
Kozosol plus	Brightens the skin, for pigmentation, acne scars	Rumex occidentalis extract (3%) Alpha Arbutin Resorcinol Licorice	India Rs 1990/- (20g)
Tranacix cream	Melasma, Rosacea, Hyperpigmentation	3% Tranexamic Acid	France Rs 8,194/- (30g)
Biotopix instant lifting cream	Facial tightening, Anti-ageing, Skin rightness	Milk Protein, acrylamide	France Rs 6138/- (15g)
Light eyes	Eye contour hydrogel for dark circles and eye puffiness – Periocular pigmentation	Pisum sativum (pea) extract (1.7%), Acetyl tetrapeptide-5 (1%), [N-hydroxysuccinimide, Palmitoyl oligopeptide, Chrysin, Palmitoyl tetrapeptide-7] (2%), Alpha lipoic acid (0.2%)	France Rs 1950/- (15ml)
Eye Klen under eye dark circle cream	Lightening cream	Hamamelis virginiana (Witch Hazel) Extract 2%, Niacinamide 2% Helianthus annuus (Sunflower) Seed Oil 2%, Palmitoyl Tetrapeptide- 3-1%, Palmitoyl Oligopeptide 1%, Glycyrrhiza Glabra (Licorice) Root Extract 1%, Vitamin E 0.5% Vitamin A 0.5%, Hyaluronic Acid 0.1%	India Rs 1400/- (20ml )
Biotopix eye bags and dark circles – BI active cream	Minimizes under eye darkness and puffiness	Niacinamide (V B3), Acetyte tetrapeptide - 5, Oak extract.	France Rs.4893/- (15g)
Geno skin Fluid Base K	Anti-aging reducing under eye darkness or brightens skin	Glucosyl hesperidin, Ruscus aculeatus root extract sodium hyaluronate <b>pH 5.5- 6.5</b>	Spain Rs.2990/- (20ml)

Product name	Claim	Ingredients	Cost/ country of origin
Teen derm gel	Exfoliating cleansing gel for combination / oily skin prone to acne	Salicylic acid 1% Copper pca 0.05% Zinc pca 0.05% Xylitylglucoside 0.1% Butyl avocadate 0.01% Boswellia serrata resin extract 0.001%	France Rs 1840/- 150ml
Neotone gel	Exfoliating cleansing gel for the treatment of pigmentation spots – All types of spots	Xylityl glucoside 2% Glycolic acid 0.34% Salicylic acid 0.35 Ascorbyl tetraisopalmitate 0.2% Glycyrrhiza glabra (licorice) root Extract 1%	France Rs 2075/- 150ml
Neostrata ultra brightening cleanser	Brightens and clarifies	NeoGlucosamine (N-Acetylglucosamine) 6% Gigawhite (Swiss alpine plant extracts)	USA Rs 4524/- 100ml
Purifying Moose 150ml	Acne cleansers	Clorhexidina, Salicylic acid, Lactic acid, Lactobacillus ferment, Urban D-tox	Spain Rs 6450/- 150ml
Ultra glow face wash	Skin lightening Skin brightening	Lactic acid 1.3%, Salicylic acid 1%, Benzophenone 4 - 0.3% <b>pH 5.7</b>	Sri Lanka Rs 950/- (100ml)
Neostrata mandelic clarifying cleanser	Formulated to smooth skin texture and clarify pores/ Washes away excess oil and problematic bacteria	Gluconolactone 4% Salicylic Acid 5% Mandelic Acid 3% Glycerin Tea Tree Oil	USA Rs 4130/- (200ml)
Actipur Cleansing gel	For oily skin	Arctium lappa root extract, Nasturtium officinale leaf extract, Salvia officinalis (sage) leaf extract	France Rs. 4390/ - (400ml)
IVAPUR purifying cleansing gel	Purifying and refreshing cleansing gel for combination and oily sensitive skin	Glycerin (0.8%), Zinc PCA (0.4%) Juniperus Oxycedrus (Cade) Wood Oil (0.05%) <b>pH 4.70 - 4.77</b>	France Rs. 3410 /- (250ml)
Airol N face wash - 60ml	Anti-Acne face wash.	Aloe vera Extract 2.5% Ac-Net (Oleanolic Acid, Nordihydroguaiaretic Acid) 2% Vitamin E Millocapsule Type 3 1% <b>pH 6.14</b>	Developed In USA, Manufactured In Pakistan Rs 2850/ -(60ml)
Eventone 4 face wash - 100ml	Melasma, Blemishes, Pigmentation, Dark Spots,	Salicylic Acid 2%, Tocopheryl Acetate 1% Tetrahexyldecyl Ascorbate 0.5% Glycyrrhiza Glabra 1.5% <b>pH 6.5</b>	Developed In USA, Manufactured In Pakistan Rs 3720/- (100ml)
Genomask Vitamin C facial mask	Skin lightening Skin brightening	Ascorbic acid hydrogenated castor oil ND PEG-40 Triethanolamine NA Parfum ND Chenopodium quinoa seed extract <b>pH 4.5-5.5</b>	Spain Rs. 3490/- (Pack of 6 x 8 ml sachets)

<b>Product name</b>	<b>Claim</b>	<b>Ingredients</b>	<b>Cost/ country of origin</b>
Solaris Ultra - 60ml	Sunscreen	Microfine Zinc Oxide 10% Microfine Titanium Dioxide 5% Octocrylene 0.7% Benzophenone-3 3.5% Ethylhexyl Methoxy Cinnamate 4% Aloe vera Extract 10% Vitamin C 0.05% Vitamin E 0.05%	Developed In USA, Manufactured In Pakistan Rs 2850/- (60ml)
Heliocare 360° Gel Oil-Free SPF 50	Repair of sun damage Antioxidant Broad spectrum protection (SPF50, PA++++, Visible and infrared)	Fernblock (Polypodium Leucotomos) BioShield System (fractionated biomimetic melanin, OZT-10 (Oxothiazolidine), an antioxidant agent that can protect against infrared radiation.) Green Tea Vitamin C and E	Cantabria labs Spain Rs. 5,312.00/- (50ml)