

**A REVIEW ON COMPRATIVE STUDY OF ANTI AGING  
PROPERTIES OF DIFFERENT COSMECUTICALS PRODUCT:  
TURMERIC, ALOEVERA**

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**ABSTRACT**

It is a comparative study of the cosmeceutical products which have the anti aging properties which are the turmeric and the aloe vera. Cosmeceutical are derived from the pharmaceutical and the cosmetics which contain active ingredient like vitamins, enzymes, anti-oxidant, essential oil etc. According to the USFDA and European union 'An articaland drugs intended for the use in diagnosis, suppression, treatment or prevent of disease or intended to effect the structure or any function of the body. In a study found that aloe vera have more than active ingredient which have many biological effect of the human body such as the treatment of skin problems, burn, wound healing,

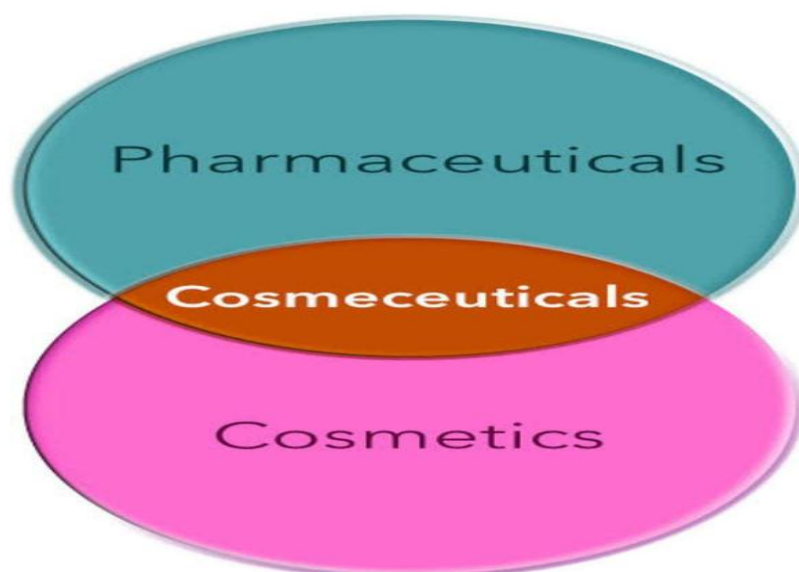
anti-inflammatory, anti-cancer, anti oxidant, anti-diabetics, constipation and many other disease or disorder. Aloe stimulates fibroblast to produced collagen and elastine fiber making skin more elastic and less wrinkled. Muccopolysaccharide in aloe helps in moisture binding under the skin. Turmeric is obtained from the rhizome of curcuma longa which is traditional use in Indian medicine system as the wound healing anti-bacterial, anti-microbial, anti-inflammatory and coloring properties. Turmeric is used in cosmetics product due to its reduction properties of free radical on skin. Some time it's used as anti carcinogenic, cvs treatment and many more uses are present

**KEYWORD:** Antioxidant, Turmeric, curcumin, antibacterial, Aloe vera, Aloerin, Dermatology, Skin diseases.

## INTRODUCTION

Cosmeceuticals are the cosmetic product with bio-active ingredients which have their own importance in the medical treatment and their medical benefit. The cosmeceutical bio-active product are synthesized from botanical, animal or chemically and they are performed as test and investigated as the form of active ingredients in cosmeceuticals.

The word of cosmeceutical derived from two words “The words are cosmetic and pharmaceutical”. Where ‘cosmetic’ means a toiletry designed to beautify the body and ‘pharmaceutical’ means connected with the industrial production of medicine. Cosmeceuticals contain active ingredients such as Vitamins, Phytochemicals, Enzyme, Antioxidant, Essential oil.



**Fig. 1: Cosmeceutical.**

These ingredients are used to produce the product such as Creams, Lotions, and Ointments. Therefore cosmeceuticals have recently attracted increase attention of people due to their beneficial effect on human health. Acc. to US-FDA, “The cosmetic product are the prescription or over the counter. The same properties of drugs and cosmetics differentiate by FD&C act based on their intended use and ability to affect the structure and function of the cutis. The USFDA and the European union are defined as “An articles and drug intended for the use in the Diagnosis, Suppression, Treatment or prevent of disease or intended to affect the structure or any function of the body.” In contrast, The FD&C act of 1938 defines it as “Articles or drug intended to be Rubbed, Poured, Sprinkled or Sprayed on, introduced into or

otherwise applied to the human body or any other part of body for Cleansing, Beautifying, Promoting attractiveness or altering the appearance ” without affecting structure or function. In India a well defined Drug and Cosmetics Act passed in 1940 and applied in 1945. Which operate the regulation of cosmetics under the regulation of cosmetics under the authority of the CDSCO.

### CONCENTRATION OF ACTIVE INGREDIENT AND LABELLING OF COSMECEUTICAL PRODUCTS

The issues become more difficulty when the basis of the drug vs cosmetics differentiation center on the concentration of the active ingredient. Now days sunscreen containing products are classified as cosmetics provided the sun protection factor (SPF) is below 4, while high concentrated (SPF) sunscreens are approved for the sale over the counter. Recently the FDA has implicated proposal for classifying any sunscreen that indicate sun protection factor as drug. Similarly while the FDA regards Lactic acid at 12% as a drug the some ingredients in lower concentration is permitted in cosmetic.

**Table 1: Concentration of active ingredient.**

High concentration (12%) of lactic acid drugs name .	Low concentration (4%) of lactic acid cosmetics name.
Prismasol	Purac BFS-30
Dianeal	Galacid LACML90
Sporsky-DS	Natural milk

Labelled Protection Category	Low	Medium	High	Very high
Labelling Sun Protection Factor (SPF)	6, 10	15, 20, 25	30, 50	50+

**Fig. 2: Labeling sun protection factor.**

At the labeling according to the regulation there should appear to completely ignore the effect of vehicles, but they should maintain in labeling and their quantity in proper ways.

## Example of Cosmetic Product Label

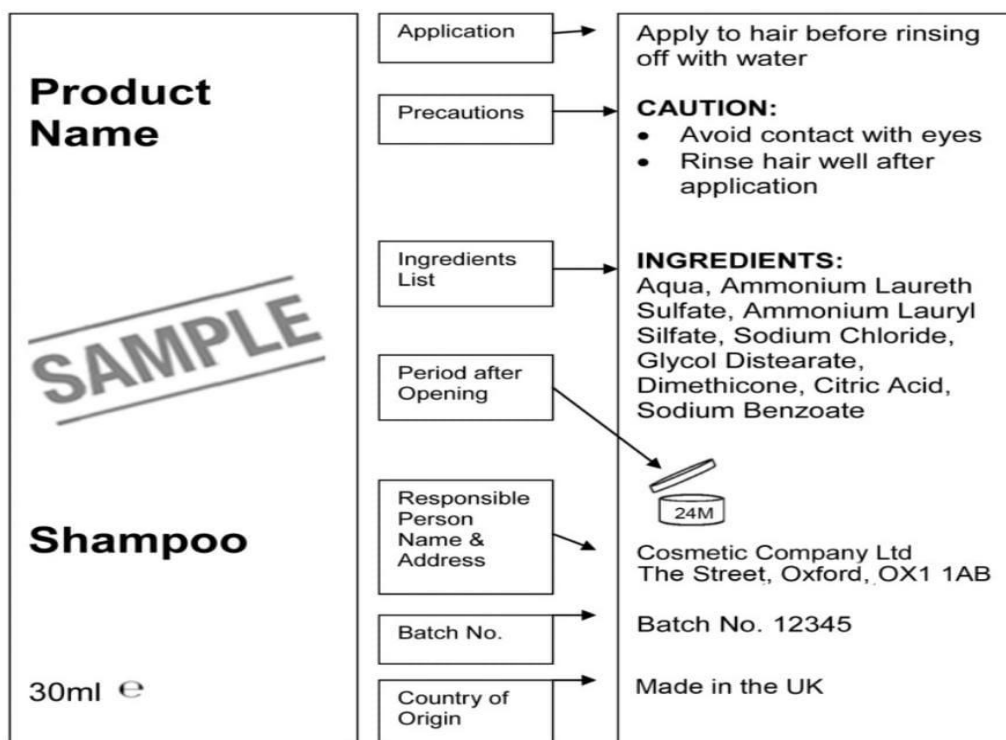


Fig.3: Labeling sample.

Table 2: Cosmeceutical product / indication.

1	Anti aging	Curcumin Crocin
2	Photo melanosis & photo tanning	Curcumin Cucumber extract Lemon juice Hydroquinone
3	Pigmentation related	Licorice extract Lactic Acid Vit.C & Vit.A Turmeric
4	Rhytide reduction	Vit.A Aloe Extract Glycolic acid Lactic Acid
5	Anti-inflammatory	Aloe Lemon (Vit.c) Cucumber Licorice root extract Green tea
6	Fat loss	Forskolin Caffeine Green caffeine

		Vit.C Green tea Lemon tea
7	Hair Growth	Castor oil Aloe Vera Amla Coconut oil
8	Hair fall prevention	Onion juice Bhringraj Brahmi Rosemary oil
9	Hair color	Henna & other dye color
10	Skintone & clarity of complexion	Aloe soothing cream Vit .C soothing cream Green tea moisturizer

About Aloe Vera:- Aloe vera is also known as “Ghritkumari” which have many variety of medicinal use. Aloe vera has been long used as a traditional medicine for inducing wound healing. More than 75 active ingredients are present in the form of Vitamins, Minerals, Enzymes, Sugar, Anthraquinone or Phenolic compounds, Lignin, Saponins, Sterols, Ammonia Acid and Salicylic acid.

**Table 3: Active ingredients.**

Class	Compounds	Properties
Anthraquinones/anthrones	Aloe-emodin, aloetic-acid, anthranol, barbaloin, isobarbaloin, emodin, ester of cinnamic acid.	Aloin and emodin acts as analgesics, antibacterials and antivirals.
Carbohydrates	Pure mannan, acetylated mannan, acetylated glucomannan, glucogalactomannan, galactan, galactogalacturan, arabinogalactan, galactoglucoarabinomannan, pectic substance, xylan, cellulose	A glycoprotein with antiallergic properties, called alprogen and novel anti-inflammatory compound.
Chromones	8-C-glucosyl-(2'-O-cinnamoyl)-7-O-methylaloediol A, 8-C-glucosyl-(S)-aloesol, 8-C-glucosyl-7-O-methylaloediol A, 8-C-glucosyl-7-O-methylaloediol, 8-C-glucosyl-noreugenin, isoaloesin D, isorabaichromone, neoaloesin A	The novel anti-inflammatory compounds.
Enzymes	Alkaline phosphatase, amylase, bradykinase, carboxypeptidase,	Bradykinase helps to reduce excessive inflammation when applied to the

	catalase,cyclooxygenase, lipase, oxidase, phosphoenolpyruvate, carboxylase, superoxide dismutase	skin topically, while others help in the breakdown of sugars and fats.
Inorganic compounds	Calcium, chlorine, chromium, copper, iron, magnesium, manganese, potassium, phosphorous, sodium, Zinc	They are essential for the proper functioning of various enzymes systems in different metabolic pathways and few are antioxidants
Miscellaneous including organic compounds and lipids	Arachidonic acid, $\gamma$ -linolenic acid, steroids (campesterol, cholesterol, Bsitosterol), triglycerides, triterpenoid, gibberellin, lignins, potassium sorbate, salicylic acid, uric acid	
Proteins	Lectins, lectin-like substance	It also contains salicylic acid that possesses anti-inflammatory and antibacterial properties. Lignin, an inert substance, When included in topical preparations, enhances penetrative effect of the other ingredients into skin. Saponins that are the soapy substances from about 3% of the gel and have cleansing and antiseptic properties.
Saccharides	Mannose, glucose, L-rhamnose, aldopentose	
Vitamins	Vitamin A, B12, C, E, choline and folic acid	Vitamin A, C and E are antioxidants and antioxidant neutralizes free radicals.
Hormones	Auxins and gibberellins	That helps in wound healing and have antiinflammatory action.

Due to its highly composition of active ingredients it have many biological activity such as Effect on immune system, Anti-Oxidant, Anti-Microbial, Anti-Bacterial, Anti-Fungal, Anti-Viral, Anti-Inflammatory, Anti-Diabetic, Wound healing, Anti-Tumor, Anti-Ulcer, Veterinary use (wound healing product), Detoxifying, Moisturizing, Laxative & Purgative effect, Antiseptic and Anti-Aging property.

**Anti –Aging properties of Aloe vera :-** Aloe stimulates fibroblast which are able to produce the collagen and elastin fibers making the skin more elastic and less wrinkled. Aloe also has a wonderful moisturizing activity. The presence of mucopolysaccharide it helps in moisture binding under the skin. It was proposed that the aloe vera gel containing product improved

skin hydration possibly. It also has been shown that the cohesive effects on the superficial flaking epidermal cells by sticking them together softens the skin. Amino acids also soften and harden skin cells and zinc acts as an astringent to tighten the pores. Aloe vera gel, cream or lotion applied on the face forms a mask that helps to shield the skin from dust and other natural elements which may damage the skin. Detoxing of the body also helps in the anti-aging effect produced. So, Aloe vera juice is a great natural aid to detox the body with our stressful lives, the pollution around us, the junk food we eat so, we need to clean our body systems from time to time. Aloe juice provides vitamins, minerals and trace elements to help our bodies deal with their stress and strains everyday.

**Table 3: List of some aloe vera anti-aging products.**

Serial no	Name
1	Aloe body soothing soap
2	Aloe vera moisturizing gel
3	Herbal facial massage gel
4	Revitalizing gel scrub
5	Aloe vera sunscreen gel
6	Aloe face wash
7	Aloe vera under eye gel
8	Aloe vera cleanser
9	Refreshing moisturizer
10	Nourishing lotion
11	Aloe vera face and body sun lotion
12	Depigmentation cream
13	Purifying nourisher
14	Aloe vera moisturizing lotion

Basic properties of turmeric are obtained from the rhizomes of plant *CURCUMA LONGA* underground which belong to family Zingiberaceae. Turmeric is used from ancient times as the spices, dyes, antibiotics and others as cosmetics. In the turmeric present antioxidant properties which are reduced the free radical on the skin which helps in controlling aging by protecting cells from damage.

The extract of turmeric which is in the form of curcumin has a large amount of application in foods, pharmaceutical, and cosmetic industry in it has a better effect of antioxidant comparing to others such as vitamin C and it has anti-inflammatory and coloring properties. Turmeric is commonly used in spices due to its medicinal properties. It is documented in Indian and Chinese medicine systems. Due to the presence of high amount of phytochemical it is widely used in treatment of several diseases.



**Table 4: List of biochemical content in dried turmeric.**

Biochemicals	Amount
Curcumin	3.1% - 3-4%
Anthocyanins	18.9% - 37.0%
Phenols	0.15-0.62%
Tannins	0.32-0.76%
Protein	3.6-6.8%
Sugar	20.5-43.4%
Oil	3.7-5.3%
Ash	6.9-9.8%
Moisture	90.2-91.3%

**Table 5: Biological activity of turmeric and its compound.**

Sl. No	Compound/ extract	Biological activity
1.	Turmeric powder	Antitumor Antiprotozoan Anti inflammatory Wound-healing
2.	Methyl curcumin	Anti protozoan
3.	Desmethoxycurcumin Bisdemethoxycurcumin	Antioxidant
4.	Volatile oil	Anti-inflammatory Antibacterial Antifungal
5.	Curcumin	Antibacterial, Anti protozoan, Antiviral, Antitumor Antioxidant

**Medicinal use of turmeric**

The wide medicinal and therapeutic properties such as.

- 1. Anti carcinogenic properties-** Turmeric and curcumin are to capable of suppressing the activity of several common mutagens carcinogens in variety of cell type in both in vivo and vitro.
- 2. Cvs treatment-** Turmeric produce cardio protective effects manly by anti oxidant activity lowering lipid per oxidation and anti platelets aggregation. In studies have shown and proven that the small amount of turmeric adding to seasoning your food can significantly lower blood cholesterol level and it may help in prevention of atherosclerosis (the buildup of plaque that can block arteries & lead to heart attack or stroke).
- 3. Hepatic protection & Renal protection effect-** Turmeric have hepatoprotective and Reno protective properties same as Silymarin. The hepatoprotective and Reno protective



properties from a variety of toxic injury in hepatic and renal. Due to high of used of drug such as acetaminophen . The hepatoprotective and renoprotective effects of turmeric are mainly due to its antioxidant properties.

4. **Gastrointestinal effect-** Curcumin stimulate the gall bladder to produce bile which are help in improve digestion. Turmeric powder has beneficial effect on stomach in inhibit ulcer formation caused by stress. I t also inhibit intestinal pain and increase bicarbonate gastrin and pancreatic enzyme.
5. **Anti-aging properties-** Turmeric have lots benefits for the skin including speeding up the process of healing wounds , clamping pores on the face to reduced ache from the time of it has antioxidant and inflammatory properties which are very full in treatment of skin and aging properties .
6. **Anti-oxidant properties-** Extract of turmeric and its cur cumin component are get easily soluble in water and fat and it shows strong character of antioxidant activity in compare to vitamin C and E. Oxidative damage is one of the mechanism of which are responsible for aging and other disease. The organic substance react with radical and cause harm .Curcumin have the potential to control these disease through its potent antioxidant activity.
7. **Photo protector activity-** This activity is occurs due to its anti oxidative properties on the skin surface have lipids which are get unsaturated due to this it get easily attacked by free radical. The UV rays of the sun get penetrate in the skin and damage caused by these radicals. Prolong exposure to these radiation degrade the lipids which cause translucent yellowish or brownish in the texture of skin .Extract of turmeric effective in suppressing inflammation and protecting the epidermal cell from the damage caused by the UV Beta radiation. Small dose of turmeric which contain curcumin are able to protect against chromosomal damage caused by Gamma radiation.

**Table 6: Some anti-aging product.**

S.no	Name of product
1	Turmeric face milk
2	Moisture booster
3	Turmeric oil
4	Turmeric face wash
5	Turmeric cream
6	Turmeric facial scrub
7	Turmeric anti tanning
8	Anti acne

## CONCLUSION

In conclusion, found that Turmeric have less active ingredient and limited medicinal used and in cosmetics its generally used maximum as the antioxidant in other hand the aloevera have more than 75 active ingredient are present which have wide range of therapeutic. Aloevera are have more medicinal and cosmaceutical used then turmeric such as gel, sunscreen, lotion, nourisher, moisturizer cream, and much more products are available in the market it is easily obtain from aloe leaf and have less chance of side effects of it. Due to all aloevera medicinal properties it's become an important ingredient along with turmeric cosmeceutical product.

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