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Review Article

A REVIEW ON ANTI AGING HERBAL FACE CREAM

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Abstract

According to research, skin aging results in a constant deteriorating process due to protein and cellular DNA damage. The primary goal is to formulate an anti-aging herbal cream utilizing only natural ingredients; Amla, curcuma longa, hibiscus, pipper-mint, olive oil, vitamin E, green tea, coconut oil, aloe vera, basil oil, and other natural APIs include pomegranate and ginseng. Natural ingredients are used to create this water-in-oil emulsion-based cream. All of the substances together can be considered a multifunctional cream, and further studies on the cream's stability and irritancy on skin can be conducted.

Keywords: Anti Aging, Natural API, W/O emulsion, Herbal oil.

INTRODUCTION

We all want to seem youthful and attractive, so we use a variety of cosmetics to tone up our skin and reduce pimples, acne, wrinkles, skin tan, blackheads, and other signs of aging.[1] The effect of skin ageing is a continuous degradation process caused by protein and cellular DNA damage. There are two forms of skin aging: (i) sequential skin aging and (ii) photoaging.

Because they change the skin's function and physiological features, sequential skin ageing is a universal and predictable process. Due to insufficient keratenocyte synthesis in the skin layer, the stratum corneum delays the creation of neutral lipids in the ageing process, resulting in dry, pale skin and wrinkles. Photo aging, on the other hand, is caused by excessive UV exposure. Photoaging is characterised by dry, pale skin, shallow skin, fine wrinkles, and deep furrows, which are caused by a random mixture of dermal and epidermal portions, as well as elastosis and heliodermatitis.

We use cosmetics to protect skin from exogenous and endogenous toxins as well as to enhance the attractiveness and appeal of skin. Cosmetics are used not only for development, but also to give us a pleasing external look and to treat a variety of skin conditions. Natural ingredients in skin formulations enhance the skin's health, texture, and moisture, as well as retain skin elasticity by lowering type I collagen and providing UV protection. Natural elements in cosmetic preparations assist in preventing the development of free radicals in the skin, allowing the skin to be protected for longer periods of time. The ideal choice for reducing skin issues such as ageing, wrinkles, hyper pigmentation, rough skin texture, acne, and skin tan is to use cosmetic products with natural ingredients.

There are many synthetic cosmetic products that are similarly effective, but their various negative effects have caused people to be concerned about their health, thus the demand for herbal cosmetics is fast increasing. [2]

HERBAL INGREDIENTS:

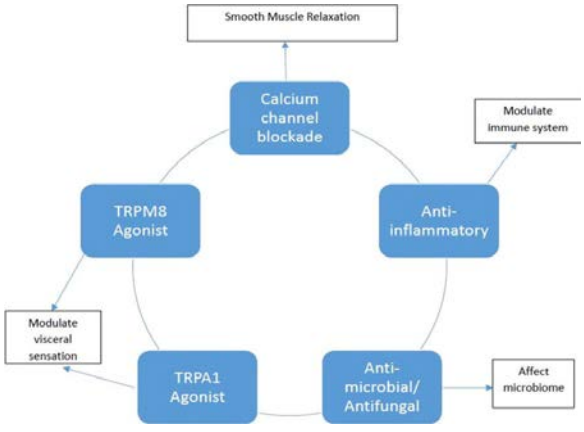
1. <u>Pepper Mint</u>:

Family : Labiatae
Botanical name :Mentha pipertia L.
Parts used : Leaves & whole plant

Chemical constituents:

Menthol, Menthone, Menthyl acetate, Menthofuran, 1,8-cineol, Limonene, Pilegone, Caryophyllene, Pinene, Eriocitrin, Hesperidin[3]

Mechanism of action:



- Peppermint oil behaves as a smooth muscle relaxant by blocking the calcium channel. Menthol is the major ingredient in peppermint oil.
- Regulate visceral sensation: pepper oil (menthol) is often used as a topical analgesic, and when taken orally, it reduces visceral discomfort.
- Peppermint oil has antibacterial, antifungal, and antiviral properties that are beneficial to select anaerobes.
- Regulate immune system: Menthol suppresses the release of inflammatory mediators in human monocytes, indicating that it has anti-inflammatory properties.[4]

Pharmacokinetics:

Absorption: Because peppermint oil (menthol) is highly fat soluble, it absorbs quickly into the proximal intestine after intake.

Metabolism: Menthol is mostly metabolised in the liver, with simple glucoronides and oxidation products as metabolites.

Excretion: Menthol is mostly eliminated in the bile, although it is also excreted in the kidneys and faeces.[5]

Uses:

- Cough
- Reduces spasm
- It protect from gingivitis
- In migraine headache
- Sore throat
- Help in healing of ulcer
- Kill parasites

Side Effects:

- Severe burning
- Burning sensation on skin
- Heart burn
- Allergic reaction (mouth sore)
- Nervousness

2. <u>Pomegranate</u>:

Botanical name: Punica Granatum
Kingdom : Plantae (angiosperms)

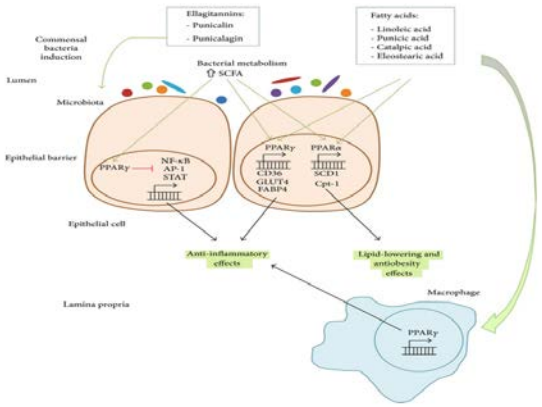
Order : Myrtales
Family : Lythraceae
Genus : Punica
Species : Pgranatum[6]

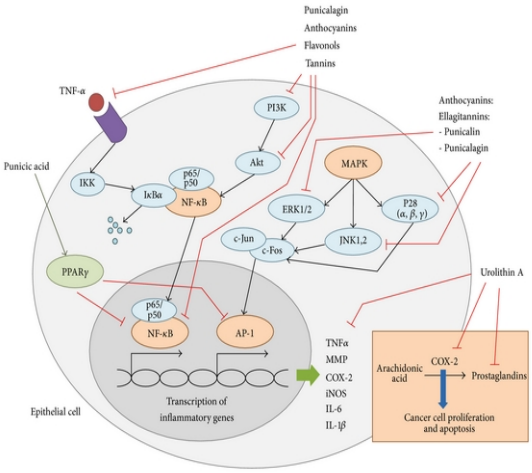
Chemical Constituents:

Anthocyanins, Quercetin, Gallic acid, Asistic acid, Rutin, Punicic acid,Flavones, Punicalin.[7]

Mechanism of Action:

- Pomegranate ellagitannins interact with gut microflora, killing acute and chronic intestinal disorders.
- Punicalagins stimulate the peroxisome proliferator-activated receptors (PPARs), which inhibit the development of pathogens such as staphylococcus aureus, clostridia species, and pseudomonas aeruginosa.
- Pomegranates stimulate the PPARβ/δ, PPARα and PPARγ receptors, which help to reduce obesity and insulin resistance.
- Activation of PPAR, which suppresses the transcription of pro-inflammatory molecules, has an anti-inflammatory impact.
- Cox 2 has anti-cancer properties via the NF-kB and MAPK pathways.[8]





Uses:

- Sore throats
- Digestive disorder
- Tape worms
- Prostate cancer
- Diabetes
- Arthritis
- Osteoarthritis
- Urinary infection
- Free radical scavengers

Side Effects:

- Itching
- Swelling
- Runny nose
- Difficulty breathing

3. <u>Aloe Vera</u>:

Kingdom : Plantae
Order : Asparagales
Division : Spermatophyta
Class : Monocotyledoneae
Family : Liliaceae
Genus : Aloe[9]

Chemical Constituents & Active Components:

Vitamins – Vit-A,C,E,B1, B2,B6 and B12
Enzymes – Aliiase, amylase, oxidase, catalase, lipase
Minerals – Calcium, copper, potassium selenium,chromium
Sugars – Glucose, polymannose, alprogen,
Organic Acids – salicylic acid sorbate
Anthraquinones - Aloin, anthranol, emodin.
Fatty acids & Steroids – Beta-sisosterol, Lupeol, cholesterol
Non-essential aminoacids – Arginine, glycine, alanine
Essential aminoacids – Methionine, leucine, lysine
Hormones – Auxins, Gibberellin.[9]

Mechanism of Action:

Anti-aging — Oligoelements such as manganese and selenium produce the antioxidant enzymes glutathione peroxidase and superoxide dismutase, which aid in cellular anti-aging.
Healing effect – Gibberlin (growth hormones) and glucomannan (mannose rich polysaccharide) interacts with the receptor of growth factor on fibroblasts,causing collagen production to rise.
Anti-inflammatory – It inhibits COX pathway and reduce prostaglandin E2 synthesis.
Anti Viral and Anti Tumor – Here by indirect action immune system is stimulated and it's direct action posses by enthraquinones.
Anti-Diabetic – Aloe vera gel reduce the free fatty acid, fasting blood glucose tissue cholesterol and increases the plasma insulin levels. [9,10]

Uses:

- Anti aging
- Anti fungal
- Anti oxidant
- Analgesic
- Anti cancer
- Hepatoprotective
- Wound healing
- Anti inflammatory

Side Effects:

- Stinging sensation
- Redness
- Red urine
- Abdominal cramps [9,10]

4. Coconut Oil:

Kingdom	:	Plantae
Family	:	Arecaceae
Order	:	Arecales
Genus	:	Cocos L.
Species		:C. nucifera [11]

Chemical Constituents:

Saturated fats :
Lauric acid (45% to 52%), Myristic acid (16% to 21%), Palmitic acid (7% to 10%), Caprylic acid (5% to 10%), Capric acid (4% to 8%), Stearic acid (2% to 4%), Caproic acid (0.5% to 1%), Palmitoleic acid (in traces)
Unsaturated fats:
Oleic acid (5% to 8%), Linoleic acid (1% to 3%), Linolenic acid (up to 0.2%)

Mechanism of Action with Therapeutic benefits:

Wound Healing Effect:

Virgin coconut oil (VCO) increase the wounds healing activity much rapid by decreased the epithilization add on to various levels of tissue of the wound's granulation. Collagen soluble pepsin enhance the VCO thus cross-linking of collagen increase.

Anti-inflammatory, Antipyretic & Analgesic Effects of VCO:

Anti-inflammatory action of VCO is shown by reducing the phosphatase activity, transudative weight, seum alkaline and granuloma formation. Antipyretic action is due to yeast-induced hyperthermia & each analgesic action due to induced of acitic acid.

Dermatitis Effect of VCO:

In Atopic dermatitis condition the VCO act by decreasing the transepidermal water loss

thus increase the function of epidermal barrier and provide hydration.

Antioxidant Activity:

VCO reduce the inflammation and lipid peroxidation by increasing the antioxidant enzyme level as it's rich in polyphenols.

Uses:

- Wound healing
- Antioxidant
- Dermatitis
- Anti-inflammation
- Hepatoprotective activity
- Analgesic
- Immunomodulatory effect[12]

Side Effects:

- Increase cholesterol level
- Diarrhea
- Cramps
- Increase cardiovascular risk

5.Tulsi:

Kingdom	:	Plantae
Order	:	Lamiales
Class	:	Magnoliopsida
Family	:	Lamiaceae
Genus	:	Ocimum
Species	:	O. sanctum [13]

Chemical Constituents & Active Components:[14]

Eugenol, methyl eugenol, carvacrol, sesquiterpine hydrocarbon caryophyllene, cirsilineol, rosameric acid, isothymusin, curcimaritin, apigenin.

Mechanism of Action:[13,14]

Skin Care: To treat ringworm and other associated disorders such as leucoderma, a paste made from tulsi leaves is administered to the afflicted region. Tulsi leaves are used to cure chicken pox when applied topically with saffron.

Antioxidant Property: The antioxidant potential of essential oils produced by steam hydro distillation from Ocimum sanctum was assessed using hypoxanthine xanthine oxidase with OPPH tests based on high-performance liquid chromatography (HPLC). Ocimum sanctum showed significant antioxidant ability in a hypoxanthine xanthine oxidase experiment.

Antifungal:

Methanolic and aqueous fractions of Ocimum sanctum demonstrated antifungal efficacy against dermatophytic fungus such as T. rubrum and others. In comparison to the methanolic fraction, the aqueous fraction had superior anti-dermatophytic efficacy.

Anti-inflammatory:

According to a research, linoleic acid found in varying amounts in the fixed oil of distinct Ocimum sanctum species has the ability to inhibit both the cyclooxygenase and lipoxygenase routes of arachidonate metabolism, which might explain its anti-inflammatory properties.

As Antidote:

In traditional medicine, tulsi has been prescribed as an antidote against scorpion bites, dog bites, and bug bites.

Uses:[15]

- Act against aging
- Cleanses the skin thoroughly
- Used as acne treatment
- Helps in lightning is skin tone
- Antiviral, antifungal, antibacterial, antitubercular, and antimalarial activities are all present in it.

Side Effects:

- It lower the blood sugar when used in large amount.
- People have reported feeling nausea and diarrhoea after adding tulsi tea to their diet; nevertheless, it is usually best to start with minimal amounts.

6. Ginseng:

Kingdom	:	Plantae
Order	:	Apiales
Class	:	Magnoliopsida

Family : Araliaceae
Genus : Panax L.
Species : Panax ginseng[16]

Chemical Constituents:[17,18]

Triterpenoid glycosides, also known as ginsenosides, are the most active components in ginseng. Ginsenosides are divided into two groups: protopanaxadiols (PPD), which include Rb1, Rb2, Rg3, Rh2, Rc, Rd, & Rh3; and protopanaxatriols (PPT), which include Rg1, Rg2, Rh1, Re, & Rf. It also includes saponins, polysaccharides, amino acids, volatile oil, polyacetylenes.

Mechanism of Action:[18,19]

Skin elasticity/Collagen: Ginseng can help the skin keep its smoothness by slowing the loss of collagen. "There are so many chemicals in ginseng root," It contains vitamin D & vitamin B12." All of this leads to enhanced oxygen circulation, as well as an increase in collagen formation in the dermis of skin."

Antioxidant and blood circulation: Ginseng also plays an antioxidant action via Nrf2 and increases the amounts of antioxidant enzymes including superoxide dismutase and glutathione peroxidase.

Neuroprotection: Modulation of the Akt and ERK 1/2 signalling pathways, repression of NF-κB, control of Ca2+ overinflux, shielding against NO excess production, and decrease of the apoptosis-inducing factor.

Uses:[20]

- Help in skin whitening
- Protect against pigmentation and photoaging
- Treat acne
- Reduce inflammation
- Helps in hydration boosting

Side Effects:

- Skin rashes

CONCLUSION:

According to the study, using the natural ingredients such as pomegranate, ginseng, aloe vera and other various components in varied ratios resulted in a multifunctional impact on skin, including whitening, antiaging, blood purifiers, antiwrinkle, and sunscreen effects. However it is not feasible to improve the efficacy of the product by using a single plant extract, thus by mixing various natural components, it is possible to raise the efficacy of the product.

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