

Formulation and Physical Characterization of Herbal Face Geltoner

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ABSTRACT

Topical applications of the drugs have an advantage of delivering the drug directly to the site of action and acting for longer period of time. Skin is one of the MOs widespread and readily accessible organs on the human body for topical administration and is the main route of topical drug delivery system. The main aim of this project was to formulate a natural and safe herbal skin toner which has calming, soothing, and astringent, effect on the face and skin to reduce the facial irritancy and enhance the beauty and can be used in day today busy schedule.

The extracts used are from the ingredients which are easily available, economical and has nutritional value from topical point of view. Toner has gained the popularity as it can be used daily and helps in restoring the skin texture hence the purpose of the study was aimed for the similar formulation. Keywords: Aloe Vera (*Aloe barbadensis miller*); Cucumber (*Cucumis sativus*); Honey; Rose Water.

I. INTRODUCTION

Herbal Cosmetics

The herbal cosmetics are the preparations containing phytochemical from a variety of botanical sources, which influences the functions of skin and also provide nutrients necessary for the healthy skin and body. The natural herbs and their products or extract when used for their aromatic value in cosmetic preparation are called as herbal cosmetics. There has been a common belief that the chemical based cosmetics may be harmful to the skin and turned in increased awareness among consumers for herbal products which triggered the demand for natural products and natural extracts in cosmetics preparations.

Gel

A gel is a solid or semisolid system of at least two constituents, consisting of a condensed mass enclosing and interpenetrated by a liquid. The characteristic of gel and jelly is the presence of

some form of cutaneous structure, which provides solid-like properties [4]. Gels and jellies are composed of small number of solids dispersed in relatively large amount of liquid, yet they possess more solid-like than liquid-like character.

Advantages of gel

Gels forms can be used to achieve optimal cutaneous and percutaneous drug delivery. They are non-invasive and have more patient compliance. They can avoid gastrointestinal drug absorption difficulties caused by gastrointestinal pH. Gels are having property to avoid enzymatic activity and drug interaction with food, drinks and other products in diet. They can avoid the first pass effect, that is, the initial pass of drug substance through the human body. They avoid systemic and portal circulation following gastrointestinal absorption. Gels are not deactivated by liver enzymes because the liver is bypassed. Gels are applied over skin for slow and prolonged absorption. They have localized effect with minimum side effects compared to the other forms.

Toners

Toner removes any last traces of dirt; grime and impurities stuck in your skin pores after you wash your face. When added to your daily skin care routine and used regularly, it can have a major positive impact on the appearance and tightness of your pores (aging skin).

Effects of a toner on skin

Earlier the skin toner was a typical product used as a second cleansing agent for removing residual makeup after regular facial cleansing or used for removing excess sebum secreted from facial skin and to prepare the skin before nourishing treatment. Toners may be categorized into alcohol-based or non-alcohol-based toners for various skin types such as oily skin, sensitive skin, or combination skin. Nowadays, the diversity and prevalence of the products cause skin toners to be utilized more as cosmetics products with several purposes; for example, rehydrating

skin, and balancing skin pH.

Material and methods

Fresh cucumbers, aloe Vera and roses were obtained from the local market of Pune. Carbopol 934 and methanol were obtained from SDFine Chemical Ltd. Mumbai. All other chemicals used were of analytical grade.

Drug information

Cucumber

Cucumber, *Cucumis sativus* (family-Cucurbitaceae) are obtained throughout India. The silicle cucumber is an essential component of healthy connective tissue, which includes muscles, tendons, ligaments, cartilage, and bone. Cucumber juice is often recommended as a source of silica to improve the complexion and health of the skin, plus cucumber's high-water content makes it naturally hydrating, a must for glowing skin. The flesh of cucumber is primarily composed of water but also contains ascorbic acid (vitamin C) and caffeic acid, both of which help soothe skin irritations and reduce swelling.

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Medicinal Importance

Cucumber has loads of water content to keep skin hydrated. The cooling properties along with antioxidants and silica present in cucumbers help rejuvenate the skin. The flesh of the cucumber is mostly water, but also contains ascorbic acid (vitamin C) and caffeic acid, both of which help soothe skin irritations and reduce swelling and these acids prevent water retention.

- **Aloe Vera**

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. Active

components with its properties. Aloe Vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.

Vitamins

It contains vitamins A (beta-carotene), C and E, which are antioxidants. It also contains vitamin B12, folic acid, and choline.

Enzymes It contains 8 enzymes like alkaline phosphatase, amylase, bradykinase, carboxypeptidase,

catalase, cellulase, lipase, and peroxidase. Bradykinase helps to reduce excessive inflammation when applied to the skin topically.

Minerals

The calcium, chromium, copper, selenium, magnesium, manganese, potassium, sodium and zinc are essential for the proper functioning of various enzyme systems in different metabolic pathways and few are antioxidants.

- **Rosewater**

Rose water is extracted by distilling rose petals with steam. Rose water is fragrant, and it's sometimes used as a mild natural fragrance as an alternative to chemical-filled perfumes. It's been used traditionally in both beauty products and food and drink products. It also comes with plenty of potential health benefits. It has been used for thousands of years, including in the middle Ages.

- Medicinal importance
- Anti-Inflammatory Action
- Moisturizing and Anti-Aging Agent
- Cosmetic & Skin Protection Application
- Astringent effect on skin pores
- Skin whitening Agent Honey

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Honey is a mixture of carbohydrates, proteins, amino acids, vitamins, minerals, antioxidants and other compounds. It consists of a number of enzymes, including invertase, glucose oxidase, catalase, and acid phosphatase. Honey also contains eighteen free amino acids, in which the most abundant is proline. The main group of antioxidants in honey are the flavonoids, of which pinocembrin is unique to honey and bee propolis. Naturally darker honey has greater antioxidant properties in it. Acetic, butanoic, formic, citric, succinic, lactic, malic, pyroglutamic, gluconic acids, and a number of aromatic acids are found in honey. Bee's honey is almost free of cholesterol. It also contains trace amounts of the vitamins B2, B4, B5, B6, B1 and vitamin C. Also, minerals like calcium, iron, zinc, potassium, phosphorous, magnesium, selenium, chromium and manganese are found in honey.

Preparation of extract

Aloe vera gel

Steps for Preparation of aloe vera gel:

The central parenchymatous pulp was scooped out with a spatula from the Aloe leaves and the pulp was

washed repeatedly with water and finally treated with 0.1N sodium hydroxide (NaOH) to increase the pH of juice and to avoid acidity in preparation. The treated pulp was placed in a blender to obtain the juice.

The obtained juice was subjected to vacuum filtration to get clear liquid.

To the clear liquid so obtained, Carbopol 934 was added and dispersed uniformly ensuring no lumps. The prepared aloe vera gel was weighed and stored in air tight containers in a dark room to prevent photo oxidation to preparation formulation.

Medicinal uses:-

Aloe vera is commonly known as a topical gel used to treat sunburn. Promisingly, it may also provide other health benefits, largely due to its antioxidant properties. Preliminary research has indicated that aloe vera may benefit your skin, dental, oral, and digestive healthy cucumber extract



Preparation of Extract

For isolating the extract from cucumber, cucumbers were properly peeled, washed and chopped finely. Chopped material was then crushed in a grinder and the slurry obtained washed in order to obtain the

cucumber juice. The juice was then lyophilized at a temperature of -70°C so that a freeze-dried extract in the solid form can be obtained. The extracts can be stored by keeping in refrigerator till use.

Medicinal uses of cucumber

Antioxidants such as beta carotene in cucumbers can help fight free radicals in your body, unpaired electrons that damage cells and can lead to disease. Cucumbers may also have health benefits outside your body. Putting them on your skin may help ease sunburn pain, swelling, and damaged skin.

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Rosewater:

Rose water was extracted through steam distillation method in which rose petals were immediately prepared to go through a very meticulous steam-distillation process. The rose petals are kept in chamber with water.

Medicinal uses of Rose water: - Soothes digestion problems. In folk medicine, rose water has been used

to aid in digestion and reduced digestive upset. According to a 2008 study, there is some evidence that rose water can positively influence digestion and relieve digestive upset. It may also improve bile secretion, which can further aid digestion.



Preparation of gel

Preparation of toner gel

Required quantity of gelling agent was weighed and dispersed in a small quantity of aloe vera juice to form a homogenous dispersion.

Required amount of honey and tween 80 weighed and dispersed in above solution. Required amount of methanol was then added to the above solution.

Methyl paraben and propyl paraben were small quantity of water and added to above mixture with continuous stirring.

The final weight of gel was adjusted with aloe vera gel. Formulation:-

Pictures of the formulation:-



Ingredients	Amount
Aloe vera Gel 1gm	1 gm
Herbal Extract	2.5 ml
Honey	1 gm
Tween	1 ml
Methanol	5 ml
Distilled water	5 ml

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Direction for using gel toner

Put a few drops of the toner on a cotton pad. Apply it all over the face and neck.

You can also take a few drops in your hands instead of a cotton pad and apply it over your face. Allow it to dry.

Evaluation of gel toner

Preliminary evaluation of formulation was carried out as follows.pH

ThepHmeterwas calibrated and measured thepHby placing inthe beaker containing 20mg of the gel. Spreadability Test

500mg of the gel was sandwiched between 2 slides. A weight of 100gm was placed on upper slide. The weight was removed and extragel was scrapped off. The lower slide was fixed on board of apparatus and upper slide was fixed with non-flexible string on which 20g load was applied. Time taken by upper slide to slip off was noted down and the spread ability was tested.

Homogeneity

This test for the gel was done by physical touch with hands. Appearance

The appearance of prepared gel was found by observing its colour, opacity, etc physical parameters. After Feel

After applying the herbal gel toner on skin, the properties like emollient nature, slipperiness and

the amount of gel left after application was noted.

Smear Type

The test was conducted after the application of gel on the skin the smear formed was oily or aqueous in nature.

Removal

The removal of the gel applied on skin was done by washing under tap water with minimal force to remove the gel.

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Patch Test

About 1-

3gm of material to be tested was placed on a piece of fabric or funnel and applied to the sensitive part of the skin e.g., skin behind ears. The cosmetic to be tested was applied to an area of 1sq.m. Of the skin. Control patches were also applied. The site of patch is inspected after 24hrs. As there was no reaction the test was repeated three times. As no reaction was observed on third application, the person may be taken as not hypersensitive.

Irritancy Test

The gel was applied on left hand and dorsal side surface of 1sq .cm and observed in equal intervals upto 24hrs for irritancy, redness and oedema.

Accelerated Stability Studies

Accelerated stability studies were performed on all the formulations by maintaining at room temperature for 20 days with constant time interval. During the stability studies the parameters like homogeneity, viscosity, physical changes, pH and type of smear were studied. Extrudability

A simple method was adopted for this study. The formulation was filled in the collapsible tubes after the gel was set in the container. The extrudability of formulation was determined in terms of weight in grams required to extrude a 0.5cm of ribbon of gel in 10second.

Diffusion study

The diffusion study was carried out for the prepared formulation by preparing agar nutrient medium of any concentration. It was poured into petri dish a hole bored at the centre and gel was placed in it. The time taken for the gel to get diffused was noted.

II. RESULTS

Result of physical characterization

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GEL TONER

Parameter	Result
Color Greenish	Greenish
Odour	Pleasant chacteristic
pH	5-7
Irritability	Non irritable
Feel on application	Cooling
Stability	Stablity after two month was stable
Consistency	Good
Spreadability	Uniform
Washability	Easily washble
Homogeneity	By visual,by touch
Patch test	Not Hypertensive
Diffusion test	Passed
Extradability	Easily extradable
Removal	Easily removable

toner results InterPretAtIon on hAnds



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III. CONCLUSION

This herbal formulation especially in a gel form was prepared by using the ingredients which are available in day-to-day life also, which were very natural and harmless. The main purpose behind formulating it in the form of gel was its easiness in applicability and Spread ability. Also, formulating a toner was intended so as to check the effectiveness of such natural substances like cucumber and aloe vera on the skin and to check whether they are able to produce the cleansing effect in a gel form. By seeing the observations and

the results, it proved to be satisfactory. The formulation showed on application had very soothing and cleansing and most importantly toning effect on the skin.

It gave the feeling of the tightened skin. Accelerated stability studies were performed on the formulation by maintaining at room temperature for 60 days with constant time interval. During the stability studies the parameters like homogeneity, viscosity, physical changes, pH and type of smear were studied and were found to be satisfactory

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