

Formulation and Evaluation of Face Serum

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Abstract

Wrinkles on the face and aging of the skin are an undesirable effect of photodamage and UV radiation . Serum has a quick absorption and ability to penetrate deep layers of the skin, as well as a non-oily finish and a deep formula with a very high amount of active ingredients . Cosmetic Serum is a highly concentrated product based on water or oil . When using concentrates we get not only a quick cosmetic effect , but also psychological satisfaction after the treatment because the result will be seen practically immediately . Based on these properties , the aim of this work was to formulate a fairness serum using poly herbal extracts . Serum has a property of rapid absorption and ability to penetrate into deeper layer of the skin . Aloe vera gel is commonly used to treat various ailments , sunburn , minor cuts , insect bites and also as a wound healing , anti-inflammatory , anti bacterial and antifungal effect . It has skin smoothing ingredients to improve skin texture and leaves skin soft, fair and silky smooth. The formulation was found to be of good spreadability and was free from heavy metals . It is intended to provide fairness action within a week .

Keywords : Face serum , Skin , Types , Active Ingredients , Composition , Evaluation Parameter .

Introduction :

Serums is a skin care product containing a gel or light weight lotion or moisturizing consistency and have ability to penetrates deeper to deliver active ingredients into the skin . A good skin serum may provide your skin a firmer , smoother texture , make pores appear smaller and increase moisture levels . Serum has a very high concentration of active ingredients and also has a non oily finish and quick absorption . There are numerous unique varieties of serums available that perform special tasks from hydration to skin lightening . Study of human skin represents an important area of research and development in dermatology , toxicology , pharmacology , and cosmetology , in order to assess the effects of exogenous agents , their interaction their absorption mechanism and their toxicity towards the different cutaneous structures . Face serum is highly concentrated emulsion which is available in water based and oil based . Whether it is moisturizer , anti-wrinkle , or anti-aging product or skin serum all these products should contain anti-bacterial , anti-inflammatory , anti-viral , anti-oxidant , anti-cancer, immunomodulatory , hepatoprotective , and cardiogenic ingredients .

Skin :

All skin types needs these ingredients to be as healthy as possible . Gel and liquids preparations are best for oily and combination skin , serums and light lotions are best for normal to dry skin , more emollient lotions and moisturizing creams are best for dry to very dry skin . Texture is all about skin type -but the brilliant ingredients for healthy skin the same for everyone , regardless of product , texture or personal preference . Skin is a protective and largest organ of body which is struggles to heal and repair itself 24 hrs. but sometimes skin can develop dry patches for many reasons like UV rays , pollutants , makeup left on overnight can cause irritation or allergic reactions . The facial serum includes several ingredients associated with improvement in the appearance of fine lines and wrinkles and increased barrier function including a neuro peptide . The skin is the body's outermost and most superficial layer , It approximately 15-20% of the body's total mass . The skin is a constantly changing organ made up of numerous specialised cells and structures . As we become older , changes in the skin's form have an impact on how it looks .

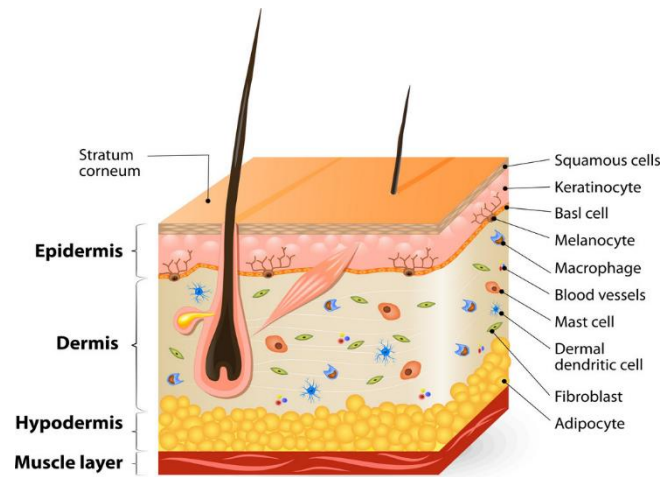


Fig. Skin Layers

Functions of skin:

1. Provides a barrier of defence against harmful substances, mechanical, thermal, and physical harm.
2. Prevents moisture loss.
3. Minimises the negative effects of UV light .
4. Serves as a sense organ (feels temperature, etc.)
5. Aids in temperature regulation.
6. An immune system that can identify infections, etc .
7. Sensation of pain , temperature , touch , and deep pressure starts with the skin .
8. Storing lipids and water .

Advantages of Face Serum:

1. Keeps skin moisturized.
2. Helps to remove skin blemishes.
3. Anti-aging benefits.
4. Helps protect the skin against future damage.

Disadvantages of Face serum:

1. Not effective for all skin issues.
2. Can be Pricey.
3. Difficult to select the proper one.
4. If not used effectively , it risked being wasted.

Types of Face Serum:

1. The oil serum :

The oil serum is the simplest to make of all the face serums. It often starts with a base of just premium, fast absorbing carrier oils, also referred to as "dry" oils. In addition to having moisturising and barrier-repairing characteristics, the premium oils used in the serum also include polyphenols, essential fatty acids, and other substances that may be broken down by the skin.



Fig. Oil Serum

2.The gel serum:

Gel serums provide the skin a "tightening" sensation, giving your consumer the impression that their skin is momentarily lifted or tightened in particular regions of the face. The gel serum provides you the chance to include some fantastic water-based (hydrophilic) plant extracts because this formulation is water-based.



Fig . Gel Serum

3.The Water based serum :

Water-based serums are comparable to gel serums, although they may contain none or very little gums and thickeners. To administer high-performance hydrophilic plant extracts that are trapped against the skin beneath a cream or lotion, you would utilize a water-based face serum. Layering an anti-aging face mist under an emulsion and then under an oil is the ideal technique to promote higher penetration of water-based compounds into the skin, delivering their high performance elements slightly deeper into the layers of the skin. The oils will form an occlusive barrier that will promote higher component penetration.



Fig: Water Base Serum

4. The emulsion serum:

An emulsion-based face serum is a moisturizer that strengthens the skin's barrier function while also delivering high performance components to the skin. Two "immiscible" phases—phases like oil and water that don't want to mix—are combined in an emulsion. An emulsifier is used to bind water and oil together and retain them in a stable state. The best chance of delivering high performance actives deeply into the tissues of the skin is through an emulsion. Given the skin's barrier function, it is highly difficult for any cosmetic component to penetrate the dermis, yet an oil and water mixture is best suited to accomplish this remarkable feat. The skin's barrier function will be strengthened by the emulsion's moisturising characteristics.



Fig . Emulsion Serum

5. The pressed balm serum :

A balm serum has a conventional balm basis of butters, waxes, and oils but also includes active substances that are oil-soluble (lipophilic) and may help the skin. The butters and waxes form an occlusive barrier on the skin that hydrates and nourishes it while allowing the pressed serum's active components to do their job. In a balm serum, dozens of intriguing unique butters and waxes can be combined with thousands of exquisite plant oils.



Fig . Pressed Balm Serum

Ideal Properties of Face Serum :

1. Brightening.
2. Fights aging.
3. Reduce inflammation.
4. Feels light on your face.
5. Remove dark circle and puffiness.

Active ingredients Used in Herbal Face Serum

1.Aloe vera :

Kingdom : Plantae

Order : Asparagillus

Family :Liliaceae

Genus : Aloe

Species : Aloe vera

Botanical name : Aloe barbadensis miller

aloe Vera has been used to treat wounds and infections. Aloe Vera is now recognised as a crucial ingredient in makeup thanks to advancements in beauty. It has nearly 20 amino acids, enough amounts of nutrients like calcium, magnesium, and sodium, enzymes, vitamins, and Its polysaccharides, nitrogen, and other ingredients make it a wonder plant for attractiveness. Here is a short explanation of some of the most significant uses of aloe Vera for cosmetic purposes.



Fig. Aloe Vera

2.Coconut Oil :

It contains nourishing fatty acids and linoleic acid which help retain the moisture in the skin and help protect and hydrate your skin .



Fig . Coconut Oil

3.Rose Water:

Rose water is said to be a natural skin toner due to this amazing pH balancing properties.



Fig. Rose Water

4. Orange Peel:

Orange peels also contain a good amount of flavonoids, phytochemicals, and antioxidants along with an array of nutrients such as calcium, magnesium, and vitamins A, B, and C. It protect the skin from UV rays.



Fig . Orange Peel

Composition of Face Serum:

Ingredients	Quantity
Orange peel powder	1.5 gm
Rose Water	2ml
Almond Oil	1ml
Coconut Oil	1ml
Glycerin	2ml
Aloe Vera Gel	1.5ml
Vitamin E Capsule	1
Demineralized Water	q. s

Method Of Preparation :

1. Orange peel powder mixed with rose water and filter it .
2. Then another beaker Almond oil and Coconut oil mixed properly.
3. Prepared a mixture of Glycerin , Aloe vera gel and sufficient quantity water .
4. Add all these mixture homogeneously and prepared a face serum .
5. Take evaluation parameter of Face Serum .

Evaluation Parameters :

1. Colour and Appearance :

The colour and appearance of the face serum formulation was observed visually which appeared translucent white or normally orange in colour .

2.Homogeneity:

The homogeneity of the of the preparation was confirmed visually by the absence of any particulate matter and also feeling the product by touch . The homogeneity of the product is good .

3.pH of the serum :

A pH meter was calibrated using a standard buffer solution . Nearly 1 ml of the serum was properly weighed and dissolved in 50ml of distilled water and finally its pH was calculated. The pH of formulation was found to be 6.4.

4. Globule size determination :

The prepared serum was properly analysed under microscope to identify and confirmed the globule size . One drop of the serum was placed on a glass slide and was diluted with water , it was covered with coverslip and was finally observed under microscope to determine globule size using stage micrometer .

5.Determination of spreadability:

2gm of serum sample was placed on a surface . A slide was attached to a pan to which 20 gm weight was added. The time required to separate the upper slide from surface was taken as a measure of spreadability.

6.Stability Studies :

Formulation and development of a pharmaceutical product is not complete without proper stability analysis carried out on it to determine physical and chemical stability and thus safety of the product .

7.Cyclical temperature :

These test is not carried out at any fixed temperature and humidity . In these test ,temperature was changed cyclically every day . At room temperature and freezing temperature to stimulates the changes in temperature .

Sr. No	Parameter	Stability
1	Freezer temperature	Unstable
2	Room temperature	Stable

Applications of Face Serum :

- 1.A face serum can help to reduce the appearance of fine lines and wrinkles more effectively.
- 2.Serums make skin more radiant and help in reducing fine lines.
- 3.Serums is that they reduce inflammation and calm your irritated skin.
- 4.Irritation is caused by dryness .

Conclusion :

The study's goal was to create serum that would nourish and make the skin on the face shine . Aloe vera gel and orange peel are the key components of the serum . Aloe vera gel from the inner middle area of the leaf frequently has an excellent effect on acne , pimples, and other skin issues, as well as burns caused by heat and sun exposure and radiation dermatitis .The gel promotes cell development and by itself aids in the healing of damaged skin. The serum eliminates fine lines , wrinkles , dark spots, and further blemishes if paired with appropriate moisturizer and sunscreens . A good pH was discovered . It was simple to wipe out and left no residue behind . The formulation was found to be stable . The report also shows numerous skin care brand a for serums available in the market and a brief description of each product . Microbial examination of serum revealed that the formulation is free from micro-organism and safe for use . So, this serum can be used to treat skin related problems .

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