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FORMULATION AND EVALUATION OF POLYHERBAL FACE SERUM: RESEARCH ARTICLE

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ABSTRACT

Daucus carota (carrot), is a herbaceous, generally biennial plant of the Apiaceae family that produces an edible taproot. Phyllanthus emblica Linn (amla), family Euphorbiaceae is an important herbal drug. These are used traditionally from ancient years in various herbal medicinal system for their antioxidant activity. The present study focused on the formulation of polyherbal face serum and evaluates the antioxidant property of serum. Antioxidants help protect skin cells from damage and aging and improve skin texture and appearance. Serum was formulated using various excipients like olive oil, sandalwood oil, glycerine, coconut oil, tween 20, demineralized water. Facial serum was tested for its PH, physical appearance, spreadability, viscosity, microbial testing, cyclic temperature test etc. The results of the stability study show that there was no change in visual acuity or homogeneity.

Keywords : Face serum, Anti-oxidant, Evaluation, Penetrate ,Active substances ,Polyherbal.

INTRODUCTION

The word cosmetics was derived from the Greek word “kosmtikos” meaning having the power, arrange, skill in decorating.

‘Cosmeceuticals’ can be referred to as topical cosmetic pharmaceutical hybrids intended to enhance beauty through ingredients that provide additional health related functions or benefits. Cosmeceutical products included in this definition are skin moisturizers, fingernail polishes, lipsticks, perfumes, facial and eye make up preparations, shampoos ,permanent waves ,hair colors, tooth paste and deodorants, as well as any material intended for use as a component of cosmetic product. It represents a category of products placed between pharmaceuticals and cosmetics that are used for the intensification of both the health and beauty of skin.

Serum

Serum is defined as light, easily absorbed oil or water based liquids that spread on the skin. It gets rapidly absorbed and easily penetrate into the deeper layers of the skin .Also has non-greasy finish and intensive formula which contain high concentration of active substances. It contains skin smoothing ingredients which enhance skin texture and makes skin soft, silky smooth and fair. The formulation has good spreadability and makes the pores appear smaller and increase moisture level. Face serum delivers the active ingredient into the skin and removes the use of hazardous chemicals in giving instant results.

Benefits of face serum

- Soothes irritated skin
- Absorbs quickly into the skin
- Improves the appearance of fine lines and wrinkles
- Protects the skin from free radicals and future damage
- Has the potential to provide more visible results
- Feels light on the skin

TYPES OF FACIAL SERUMS

1. Antioxidant Serums
2. Hydrating Serums
3. Brightening Serums
4. Anti-ageing Serums
5. Serums for Hyperpigmentation
6. Serums that reduce acne and fades acne scarring
7. Serums for sensitive skin
8. Serums for combination skin



METHOD OF PREPARATION

Preparation of extract

Each herb materials (50g amla ,50g carrot) was cut into slices and extracted by using 100 ml of ethanol as solvent . After 7 days the extract obtained was filtered using filter paper. The extract was stored in air tight container.



Fig 1 preparation of extract

Preparation of polyherbal face serum

The (o/w) emulsion based serum was formulated . The oily component consisting of olive oil, sandalwood oil, tween 20 and coconut oil is mixed together for ten minutes to obtain a uniform solution .At the same time the water phase was prepared by mixing the extracts , glycerin and a small amount of distilled water uniformly .The oil phase is added to the liquid phase drop wise under mechanical vibration at 2500 rpm to obtain o/w based on biphasic emulsion .



Fig.2 Prepared face serum

Composition of face serum

Ingredients	Standard formula (100 ml)	Working formula (30 ml)
Extract of carrot	25%	5 ml
Extract of amla	25%	5 ml
Olive oil	9%	1.8 ml
Sandalwood oil	0.1%	0.02 ml
Glycerin	25%	5 ml
Coconut oil	2%	0.4 ml
Tween 20	1%	0.2 ml
Distilled water	Qs to 100 ml	Qs to 30 ml

Evaluation of face serum**Organoleptic properties**

The formulations were characterized for organoleptic properties such as colour, odour .The formulations are visually inspected for its clarity and presence of any foreign particles .

Homogeneity

The formulation was tested for the homogeneity by visual inspection and touch

Determination of PH

A pH meter was calibrated using a standard buffer solution . Nearly 1 ml of face serum was properly weighed and dissolve in 50 ml of distilled water and finally its pH was calculated . The skin has an acidic range and the ph of the skin serum should be in the range of 4.1 -6.7.

Determination of spreadability

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

Stability studies

The stability study is conducted by keeping the drug substance in their proposed pack or prototype container in the case of bulk drugs ,in sufficient number in room temperature away from light .

RESULT AND DISCUSSION**Organoleptic properties****Table 2. Organoleptic evaluation**

Colour	Orange
Odour	Characteristic odour
Taste	Tasteless
Texture	Smooth homogenous
Homogeneity	Good

Homogeneity

The homogeneity of the formulated serum was judged by visual appearance and touch. The appearance and touch of the serum was good.

Determination of PH

The pH of formulation was found to be 6.5-6.7. As the skin has an acid pH around 4.1 to 6.7, this range of formulation is suitable for skin.

Determination of spreadability

The spreadability of liquid formulation is ability of the face serum to spread over the skin and play important role in administration of standard dose of medicament formulation on skin. Spreadability of face serum was found to be 5 to 6 cm.

Stability studies

Table 3. Stability studies

Visual appearance	Orange
Phase separation	Nil
Homogeneity	Good

CONCLUSION

The aim of the study was to formulate different herbals into a serum form moisturizing and anti-oxidant property on skin. Cosmeceuticals are skin-care products that cater both cosmetics and drug. In the serum olive oil are mainly used. The extract of amla and carrot has a very good action in acne, pimples and other skin problems, burns due to heat, sun exposure and in treatment of radiation dermatitis. Amla and carrot is rich in vitamins and minerals that have a good moisturizing capacity and anti-aging effects to maintain healthy- and fresh-looking skin and avoid pigmentation of skin. Olive oil is beneficial for treating sunburn, the antioxidants into the oil used treat damaged caused by the UV rays. It also slow down and prevent premature ageing. It contains fatty acids such as omega 6 & omega 9, which help to prevent dry skin. Stability studies revealed that there was no significant difference in the physical and pH parameter. Thus, the formulation was found to be stable. The Spreadability was found to be good. No residues were form and was easy to wash out. The emulsion stimulates cell growth and as such enhance the restoring of damage skin. So, this serum can be used treat skin related problem.

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