

Review Paper on Formulation and Development of de Pigment Serum Incorporating Peach Extract

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Abstract: Skin Serum is a skincare product you can apply to your skin after cleansing but before moisturizing with the intent of delivering powerful ingredients directly into the skin. Serum is particularly suited to this task because it is made up of smaller molecules that can penetrate deeply into the skin and deliver a very high concentration of active ingredients. This makes them a great tool for targeting specific skincare concerns, like pigmentation, signs of aging.^[1] A great source of Vitamin C, peach helps to remove dark circles and blemishes. Its macronutrients also help in reducing wrinkles hence, Peach is a common ingredient in anti-ageing face masks. Along with Vitamin A, K & C, the presence of Potassium in this fruit helps the skin to look younger by reducing age spots, fine lines and wrinkles.^[2] They are rich in antioxidants which protect the skin from harsh rays of the Sun, harmful UV A&B ray and free radicals in the environment. It also tightens the skin's pores and rejuvenates tired skin.^[3] The fruit also helps to regenerate the skin tissues by stimulating gently exfoliation on dry, flaky skin. As a natural exfoliator, it doesn't leave the skin feeling parched and rather, moisturises and hydrates it. It has the great depigmentation activity.^[4] This paper deleberates the depigmentation activity of peach fruit by making peach serum by using novel technology.

Keywords: Cosmetic, Peach fruit, Depigmentation, face serum, antioxidant, Vitamin C

I. INTRODUCTION

Serum is a skincare product you can apply to your skin after cleansing but before moisturizing with the intent of delivering powerful ingredients directly into the skin.^[5] Serum is particularly suited to this task because it is made up of smaller molecules that can penetrate deeply into skin and deliver a very high concentration of active ingredients. This makes them a great tool for targeting specific skincare concerns, like pigmentation, signs of aging.^[6]

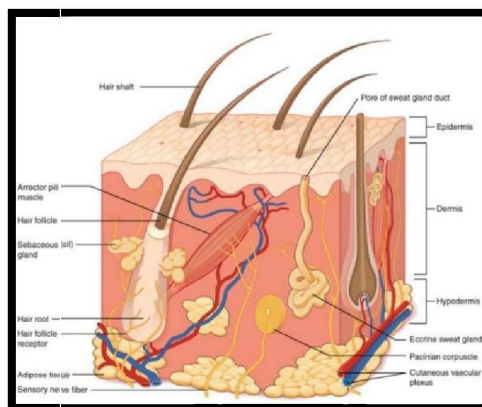


Fig . Structure of skin [7]

Mechanism of Skin lightening :

- 1) Promotes skin tones by lightening the over production of melanin.^[8]
- 2) Block the melanin production process.^[9]
- 3) Inhibits the activity of dopachrome tautmerase.^[10]
- 4) Inhibits melanin producing inflammatory responses of skin^[11]

Types of skin whitening product :

- 1) Those containing sunscreen.
- 2) Those containing light reflection ingredients.
- 3) These containing ingredient that produces chemical change on skin.^[12]

Drug profile and excipient



Fig . Peach fruit. ^[13]

Drug Profile

Active drug : Peach Fruit Extract

Biological name : Prunus persica

Classification :

Kingdom – Plantae. Family - Rosacea

Division – Magnoliophyta. Genus - Prunus

Class – Magnoliopsida. Species – P. Persica ^[14]

Antioxidant activity

Vitamin C is a powerful antioxidant with radical scavenging activity very useful in the treatment of pigmentation. Vitamin C can neutralize free radicals generated by UVB radiation. Lutein and zeaxanthin also enhance the antioxidant properties of peach fruit. ^[15]

Excipients

1. Carbopol

Functional category : Suspending agent, Emulsifying agent, binder. ^[16]

2. Disodium EDTA

Functional category : Stabilizer, chelating agent. ^[17]

3. Triethanol amine

Functional category : Alkalizing agent, Emulsifying agent ^[18]

4. Glycerine

Functional category : Humectant, emollient, solvent, plasticizer ^[19]

5. Tween 20

Functional category : Solubilizing agent ^[20]

6. Sodium benzoate

Functional category : Antimicrobial preservative ^[21]

7. Olive oil

Functional category : use as a moisturizing agent ^[22]

8. Vitamin E

Functional category : Antioxidant ^[23]

II. METHOD OF PREPARATION

Extraction of Peach

Soxhlet extraction was conducted (SOX). peach palm fruit were taken . Took a beaker containing solvent. Then we set up the assembly and performed the extraction.^[24]

Sr. No.	Ingredients	M1 For 100%	M2 For 100%	M3 For 100%
1	Water	82	80	75
2	Carbopol 940	0.3	0.3	0.3
3	Triethanol amine	0.1	0.1	0.1
4	Glycerin	4	7	8
5	Disodium EDTA	0.1	0.1	0.1
6	Tween 20	3	4	4
7	Olive oil	8	7	7
8	Vitamin E	1	1	1
9	Sodium benzoate	0.1	0.1	0.1
10	Perfume	1	1	1

Fig. Formulation Table

Formulation and optimization of base serum :- Carbopol was dispersed in 80% of water along with EDTA and allowed to hydrate Keeping overnight. After dispersing the TEA was add for desired consistancy .then one by one added remaining ingredient. Add 2 ml perfume in it. Add 2 ml of extract at last.

Test for antioxidant activity of extract

Reducing Power method:

Requirement - UV Spectrophotometer, Incubator.

Procedure – The reducing power was assayed by taking different concentration of extract (1ml) from each other were mixed in different test tubes with 2.5 ml of phosphate buffer (pH-7) and 2.5 ml of 1% potassium ferric cyanide. The mixture was then incubated at 50°C for 20 minutes. Then 2.5 ml of trichloroacetic acid (10%) solution was added to the mixture, which was mixed for 15 minutes. Finally 1.25 ml of distilled water was mixed with 0.50 ml of FeCl₃ solution (0.1 w/v). The absorbance was measured at 700nm.^[25,26]

Evaluation of extract

Preliminary phytochemical screening

Flavonoids: To test solution add few drops of NaoH solution formation of dilute acid indicates presence of flavonoids.

Glycosides: A small amount of alcoholic extract of samples is dissolved in 1ml water and then aqueous sodium hydroxide is added. Formulation of yellow colour indicates the presence of glycosides

Alkaloids (Mayer's test): 1.36gm of mercuric chloride is dissolved in 60ml and 5gm of potassium iodide is dissolved in 10ml of distilled water respectively. These two solvents are mixed and dilute to 100ml using distilled water. To 1ml of acidic aqueous solution of samples few drops of reagent is added. Formation of blue or green colour indicates the presence of alkaloids.

Lipids : In a test tube 5 drops of the sample was taken and a pinch of sodium hydrogen sulphate was added. Pungent odour emanates from the tube which indicates that glycerin is present which is produced by hydrolysis in fixed oil which shows the presence of lipids.^[27]

Invitro studies

[A] Determination of PH

Apparatus :pH meter, preferably equipped with glass electrode.

Procedure : Take of sample in a beaker and add of distilled water in it. Mix it properly until the whole gel is dissolved in water, then note the pH of the sample mixture by using pH meter.^[28]

[B] Determination of Viscosity :

Apparatus :Brook Field Viscometer.

Procedure : The viscosity of serum was determined by using spindle no. 4 using brook field viscometer then all the operating conditions was set up.^[29]

[C] Determination of Spreadability Time

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

III. RESULT AND CONCLUSION

At present because of availability of wide range of cosmetic products in market, consumers are giving special attention towards the selection of cosmetic product to develop a well standard formula, the new product viz. herbal de-pigment serum was formulated by incorporating active extract singly and also in combination for good effect.

Thus, conclusion can be made that the serum containing peach fruit extract have been able to remove dark spots and other signs also moistens the skin without any side effect making skin soft smooth and supple. It gives the glowing and attractive skin.

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