FORMULATION AND EVALUATION OF ANTIPIGMENT HERBAL BLUE PEA BASED FACE WASH CREAM SCRUB

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ABSTRACT:

Clitoria ternatea is a plant with a variety of ethnic medicinal uses. The qualitative analysis of Clitoria ternatea shows the presence of bioactive compounds such as alkaloids, tannins, glycosides, resins, steroids, saponins, flavonoids and phenols. The quantitative estimation of total Saponins, Flavonoids and Phenols in roots and of Flavonoids in shoots, flowers and seeds is also reported which is very important for the pharmaceutical industry. This is valuable information for preparation of drugs in the pharmaceutical industry and stress the need for more intensive research in this medicinal plant since the compounds play a great role in healthcare. Curcumin (diferuloyl methane), the natural yellow pigment in turmeric, is isolated from the rhizomes of the plant Curcuma longa. It constitutes about 3- 4% of the composition of turmeric 1 . The turmeric spice has been used for many centuries mainly as a food additive, primarily because of its golden yellow color. The medicinal properties of this spice were recognized in Indian folklore medicine and in Ayurveda, which is an ancient Indian traditional system of medicine. It was used as a tonic for improving health and in various combinations for the treatment of diseases such as common cold. The major breakthrough in realizing the medicinal value of turmeric came with the isolation of phenolics called "curcuminoids" , of which curcumin is the major constituent. By using grinder charcoal, green tea was crushed to make powder. Desired quantities of herbal drugs were weighed and each herb macerated with water in conical flask. Add rose water and dried herbs were allowed to mix with water by moderate shaking of conical flask for 3 days. After 3 days content was filtered out by using a simple filtration method and filtrates were collected in a separate vessel. The pH of the cream base was found to be in range of B6.2-6.9 which is good for skin pH. The viscosity of the cream was in the range of 27021-27053 cps which indicates spreadability of cream. Nutmeg gives friction to skin and makes gel as scrub. Acid value 5.9, saponification value 25.7. Irritancy test was conducted in this project work. Dye test confirms that formulation is o/w type emulsion cream. Homogeneity: formulation of base produces uniform distribution in cream. This was confirmed by visual appearance and by touch. It was found that no change in colour of cream base, when kept for a long time. After feel Emolliency, slipperiness and amount of residue left after the application of fixed amount of cream base was found Type of smear After application of cream base, the type of smear formed on

the skin were non greasy Removal. The cream applied on skin was easily removed by washing with TAP WATER and the result found to be satisfactory. The skin irritation study exhibited that no such sign of irritation, itching, redness and inflammation was found over the lip over an extended period of time.

Keywords: Emolliency, saponification value, Acid value, Saponins, Flavonoids and Phenols

INTRODUCTION:

It is concluded that Clitoria ternatea is a plant with a variety of ethnic medicinal uses. The qualitative analysis of Clitoria ternatea shows the presence of bioactive compounds such as Alkaloids, Tannins, Glycosides, Resins, Steroids, Saponins, Flavonoids and Phenols. The quantitative estimation of total Saponins, Flavonoids and Phenols in roots and of Flavonoids in shoots, flowers and seeds is also reported which is very important for the pharmaceutical industry.

METHODS:

The major break through in realizing the medicinal value of turmeric came with the isolation of phenolics called "curcuminoids", of which curcumin is the major constituent. By using grinder charcoal, green tea were crushed to make powder. Desired quantities of herbal drug were weighed and each herb macerated with water in conical flask. Add rose water and dried herbs were allow to mix with water by moderate shaking of conical flask for 3 days.

RESULTS:

After 3 days content were filtered out by using simple filtration method and filtrates were collected in separately vessel The pH of the cream base was found to be in range of B6.2-6.9 which is good for skin pH. The viscosity of was cream was in the range of 27021-27053 cps which indicates spreadibilty of cream. Nutmeg give friction to skin and makes gel as scrub.Acid value 5.9, saponification value 25.7. Irritancy test was conducted in this project work. Dye test this dye confirms that formulation is o/w type emulsion cream. Homogeneity: formulation of base produce uniform distribution in cream.

DISCUSSION AND CONCLUSION:

This is an new attempt for facial cosmetics, which can be used as scrub, but also as cleanser and antipigment effect. The study shown a satisfactory result with above discussed parameters. The natural herbal ingredient is side effect free formulation.

Keywords: inflammation, Emolliency, spreadibilty, saponification value, Acid value, Alkaloids, Tannins, Glycosides, Resins, Steroids, Saponins, Flavonoids and Phenols

MANUSCRIPT :

INTRODUCTION

Curcumin (diferuloyl methane), the natural yellow pigment in turmeric, is isolated from the rhizomes of the plant Curcuma longa. It constitutes about 3-4% of the composition of turmeric Antiaging cream and its effect : [1] Many anti-aging creams, function in four ways to help the slow skin aging process. It is a very potent antioxidant and it helps maintain the health of the mitochondria, which is the powerhouse of the cell. When this cell is compromised, it cannot perform youthful repair functions. Also, it helps turn off an inflammatory messenger known as nuclear factor kappa B that can do much damage to the skin. Alpha-lipoic acid activates a collagen-regulating factor known as AP-1 that turns on enzymes that digest damaged collagen. Aged skin occurs when the slowdown in production of youthful new cells fail to replace the accumulation of damaged aged cells. Vitamin A stimulates skin cell renewal by increasing the rate of mitotic cell division. Anti-aging creams, make sure it has four important ingredients, such as alpha-lipoic acid, glycolic acid, retinoic acid and Vitamin A. [2] Whether these products work or not, it wouldn't hurt to try. The cosmetic preparation was undergone different steps. As extraction of curcumin from curcuma longa , alcoholic extract of clitoria ternatia with the help of ethanol. Then the cream was formulated by taking various ingredients. The cream formulation of extracted herbal ingredients was evaluated. Viscosity, homogeneity, acid value after feel effects were studied and found satisfactory.

EXTRACTION OF CURCUMIN :

Turmeric rhizomes were powdered and sieved through 30 mesh size sieve to obtain sample of uniform particle size. [3] The resulting powder was extracted with acetone using cold percolation process in which the solvent uniformly seeps through the particle bed (sample powder), allowing the efficient diffusion of the soluble from the powder into the solvent after the contact time of 90 min. the solvent ratio was 5 volumes calculated on the dry weight of powdered turmeric rhizome. The extraction procedure was repeated for 7 times and the individual extracts combined before concentrating. [4] The extracts were filtered and concentrated by distillation under vacuum at temperature less than50°C to produce turmeric oleioresin. A detailed study was carried out for isolation of curcuminoids from turmeric oleioresin extracted as above. In 100ml beaker 20 g turmeric oleioresin and 20g solvent were added, mixed well and kept aside for 48 hrs at room temperature for curcumioids precipitation. [5] The precipitated curcuminoid crystals were purified by washing several times with the solvent. Drug Formulation The emulsifier (stearic acid) and other oil soluble components (Cetyl alcohol, almond oil) were dissolvedin the oil phase (Part A) and heated to 75° C. The preservatives and other water soluble components (Methyl paraban, Propylene glycol,curcumin) were dissolved in the aqueous phase (Part B) and heated to 75° After heating, the aqueous phase was added in portions to the oil phase with continuous stirring until cooling of emulsifier took place. [6]

ALCOHOLIC EXTRACT OF CLITORIA TERNATEA LINN.

Clitoria ternatea Linn. plants were collected from rural organic nursery garden, place : Bargaon, Sundargarh District, Odisha. The plant parts namely leaves, roots, shoots, flowers and seeds were shade dried and powdered in a mechanical grinder for preparation of extract. Preparation of plant extracts The powdered plant parts were Soxhletextracted with methanol. The extract, on removal of solvent in vacuum, gave a dark greenish brown semisolid residue. The powdered material or the extracts of the plant parts mentioned above were used for the study. [7] Qualitative analysis It comprised of tests for the presence of Alkaloids, Tannins, Glycosides, Resins, Steroids, Saponins, Flavonoids and Phenols. Test for Alkaloids About 0.5 gm of methanol extract was taken in a test tube and was diluted and homogenized with 10 ml distilled water, dissolved in 20 ml dilute HCl solution and clarified by filtration. The filtrate was tested with Drangendroff's and Mayer's reagent. The treated solution was observed for precipitation of white or creamy colour. [8]

By using grinder charcoal, blue tea were crushed to make powder. Desired quantities of herbal drug were weighed and each herb macerated with water in conical flask. Add rose water and dried herbs were allow to mix with water by moderate shaking of conical flask for 3 days. After 3 days content were filtered out by using simple filtration method and filtrates were collected in separately vessel. [9]

FORMULATION OF CREAMS

Drug Formulation The emulsifier (stearic acid) and other oil soluble components (Cetyl alcohol, almond oil) were dissolved in the oil phase (Part A) and heated to 75°C. The preservatives and other water soluble components (Methyl paraban, Propylene glycol, extracted materials). were dissolved in the aqueous phase (Part B) and heated to 75° After heating, the aqueous phase was added in portions to the oil phase with continuous stirring until cooling of emulsifier took place. [10]

INGREDIENTS FORMULATIONS	F1 (% w/w)	F2 (% w/w)	F3(% w/w)
Stearic acid	13	13	13
Cetyl alcohol	2	2	2
Almond oil	4	4	4
Glycerol	3	3	3
Methyl paraben	0.02	0.02	0.02
Activated charcoal	1	2	0.5

Alcoholic blue pea extract	2	1	3
Curcumin extract	1	1	2
Nutmeg powder	qs	qs	qs
water	qs	qs	qs

Evaluation

pH of the Cream The pH meter was calibrated using standard buffersolution. About 0.5g of the cream was weighed and dissolved in 50.0 ml of distilled water and its pH was measured. [11]

Viscosity

Viscosity of the formulation was determined by Brookfield Viscometer at 100 rpm, using spindle no 7.

Dye test

The scarlet red dye is mixed with the cream. Place a drop of the cream on a microscopic slide covers it with a cover slip and examines it under a microscope. If the disperse globules appear red the ground colourless. The cream is o/w type. The reverse condition occurs in w/o type cream i.e. the disperse globules appear colourless in the red ground. [12]

Homogeneity

The formulations were tested for the homogeneity by visual appearance and by touch. [13]

Appearance

The appearance of the cream was judged by its color, pearlscence and roughness and graded.

After feel

Emolliency, slipperiness and amount of residue left afterthe application of fixed amount of cream was checked.

Removal

The ease of removal of the cream applied was examined by washing the applied part with tap water.

Acid value

Take 10 gm of substance dissolved in accurately weighed, in 50 ml mixture of equal volume of alcohol and solvent ether, the flask was connected to reflux condenser and slowly heated, until sample was

dissolved completely, to this 1 ml of phenolphthalein added and titrated with 0.1N NaOH, until faintly pink color appears after shaking for 30 seconds. Acid value = n*5.61/w n - number of ml of NaOH required, w - weigh of substance. [13, 14]

Saponification value

Introduce about 2 gm of substance refluxed with 25 ml of 0.5 N alcoholic KOH for 30 minutes, to this 1 ml of phenolphthalein added and titrated immediately, with 0.5 N HCL. Saponification value = (b-a)*28.05/w a - volume in ml of titrant, b - volume in ml of titrant, w -weigh of substance in gm. [15]

Statistical analysis:

from the formulations the permeation profile was plotted as cumulative amount of curcumin permeated vs. time. Using Skin and Membrane Permeation Data Analysis (SAMPA) software, version 1.04, a free software tool used for skin and membrane permeation data analysis the flux (µg/cm2/h) and lag-time (h) estimates were generated.

RESULT

The **pH** of the cream base was found to be in range of B6.2-6.9 which is good for skin pH. The viscosity of was cream was in the range of 27021-27053 cps which indicates spreadibilty of cream. **Acid value** 5.9, saponification value 25.7. Irritancy test was conducted in this project work. Dye test This dye confirms that formulation is o/w type emulsion cream. **Homogeneity**: formulation of base produce uniform distribution in cream. This was confirmed by visual appearance and by touch. Appearance When formulation kept for long time, it found that no change in colour of cream base **After feel Emolliency**, slipperiness and amount of residue left after the application of fixed amount of cream base was found Type of smear After application of cream base, the type of smear formed on the skin were non greasy Removal The cream applied on skin was easily removed by washing with **TAP WATER** and result found to be satisfactory.The skin irritation study exhibited that no such sign of irritation, itching, redness and inflammation was found over lip over extended period of time, which revealed that the antiaging facial a gel formulation was safe and compatible to skin.





DISCUSSION:

Curcumin is derived from curcuma longa and it has been used as anti-pigment, [16] antibacterial, wound healing effect. Human aging is a very complex process, which may include different environmental factors and internal factors. The external factors may air pollution, sun radiations (UVA and UVB), and tobacco smoke. The internal factors may changes in immune reactivity due to inflammaging phenomenon. [17,18] there are different types of parameters which influence quality of a cream. As viscosity, viscosity of a product should neither be too high or low. As high viscosity lead to spreading uniformity in skin, where as less viscosity lead to less intact in skin. The viscosity of was cream was in the range of 27021-27053 cps which indicates spreadibilty of cream. [19] . The pH of the product play a very important role. pH of the final product is balanced with the formulation. Whenever any person washes its face and scrub, it should uniform and should not be irritating to skin. The **pH** of the cream base was found to be in range of B6.2-6.9 which is good for skin pH. [19] the blue pea flower is excellent herb having potential antioxidant, anti-inflammatory, analgesic, antipyretic , antidiabetic , nootropic, wound healing and many more effects in body. [20] Study of the effects of C. ternatea leaf extracts on diabetic-induced cognitive declined. It showed that the acetylcholinesterase activity, total nitric oxide levels and lipid peroxide levels all decreased significantly upon treatment, whilst the catalase, superoxide dismutase and glutathione levels all significantly increased. [21] Mold fungus growth Aspergillus niger was inhibited at a MIC of 0.8 mg/mL of the C. ternatea methanolic leaf extract. [22] it also shows potential Anthelmintic when ingested through G.I.T. rout. [23] so the ingredient used here to enhance the activity of face wash. Saponification value plays an important role to cleanse the surface. [24] The value for the product found 25.7. saponifiacation number was determined by measuring the content of ester linkage. It was back titrated with potassium oxide with 0.5 N sulfuric or hydrochloric acid in presence of phenopthalin indicator. KOH solution was used in alcoholic solution in steam bath to react in steam. Acid value found to be 5.9. after feel and emollient effect was determined by applying tap water on surface to determine whether its greasy or sticky preparation. But result found satisfactory. Nutmeg powder used here act as friction agent between the surface of skin and powder, which behave as scrub to give deep cleansing effect.

CONCLUSION: This is an new attempt for facial cosmetics, which can be used as scrub, but also as cleanser and antipigment effect. The study shown a satisfactory result with above discussed parameters. The natural herbal ingredient is side effect free formulation.

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