Preparation And Evaluation of Herbal Turmeric Cream

Mangalpawar Mukund, Mis S.S.Shete, Dr.Santosh Jain
Aditya Institute of Pharmaceutical, beed, Dr.Babasaheb Ambedkar Technological University Lonere

***Abstract*— Creams are considered an important part of cosmetic product as topical preparations from time immemorial due to their ease of application to the skin and also their removal. From cosmetic purposes, pharmaceutical creams have a variety of applications such as cleansing, beautifying, altering appearance, moisturizing etc.to skin protection against bacterial, fungal infections as well as healing cuts, burns, wounds on the skin. These semi solid preparations are safe to use by the public and society. The human skin is easily vulnerable to injury but it has the capability to heal on its own. However, thenatural healing process can take time and there is also risk of infection especially in the early stages ofinjury**

Keywords: Creams, Skin, Topical drug delivery system.

1. INTRODUCTION

The word 'Cosmetic' derived from a Greek word – 'cosmetics' that means to adorn. From that time any materials used to beautification or promoting appearance is known as cosmetic. The word "cosmetics" actually stems from its use in Ancient Rome. They were typically produced by female slaves known as "cosmetic" which is where the word "cosmetics" stemmed from. Cosmetics are used to enhance appearance. Makeup has been around for many centuries. The first known people who used cosmetics to enhance their beauty were the Egyptians. Makeup those days was just simple eye coloringor some material for the body. Now-a-days makeup plays an important role for both men and women.The importance of cosmetics has increased as many people want to stay young and attractive. Cosmetics are readily available today in the form of creams, lipstick, perfumes, eye shadows, nail polishes, hair sprays etc. Other cosmetics like face powder give glow to the skin after applying the base cream. Then we have lipsticks, which are applied by many women of all ages. They are made from wax and cocoa butter in the desired amount. Cosmetics like creams, gels, and colognes are usedon a daily basis by both women and men. Creams act as a cleanser for the face in many circumstances. More recently anti-ageing creams have been manufactured which can retain younger looking skin formany years.

The best cleansing agents are cleansing cream, soap and water. Cosmetic creams serve as a skin foodfor hard, dry and chapped skin. It mainly lubricates, softens and removes unwanted dirt from the skin. Some popular fat creams that are used include Vaseline and Lanolin. Dry creams are used in the manufacture of soap and gelatin which is used as a base for the skin. Hair care has become one of the fastest developing markets in the beauty industry. Many young men turn to oils and gels to maintain and style their hair. Products like hair gels, oils, and lotions have been introduced in the market to help protect hair fall and dandruff. Some professions, like the show business industry, focus on the importance of the outer appearance. Many personalities and artists have utilized makeup to beat the harsh lights and the glare of camera flashes.

They very well know the importance of their looks and maintain them by using a variety of cosmetics. Recent research has shown that makeup helps in protection from harmful rays of the sun. Many beauty products manufacturers have utilized the needs of people to protect themselves and their skin from the rays of the sun. Many beauty products from the rays of the sun. The Importance of Cosmetics Today Cosmetics help to enhance our appearance and make us feel more confident. With more cosmetics onthe market today than ever before, it becomes obvious to us that they play a great role in our everydaylife.

FUNCTIONS OF SKIN:

Protection:

An anatomical barrier from pathogens and damage between the internal and external environment in bodily defence, Langerhans cells in the skin are part of the adaptive immune system.

Sensation:

Contains a variety of nerve endings that react to heat and cold, pressure, touch,vibration, and tissue injury, see soma to sensory system and haptics.

Heat regulation:

The skin contains a blood supply far greater than its requirements which allows precise controlof energy loss by radiation, convection and conduction. Dilated blood vessels increase perfusion and heat loss, while constricted vessels greatly reduce cutaneous blood flow and conserve heat.

Control of evaporation:

The skin provides a relatively dry and semi-impermeable barrier to fluid loss. Loss of this function contributes to the massive fluid loss in burns.

Aesthetics and communication:

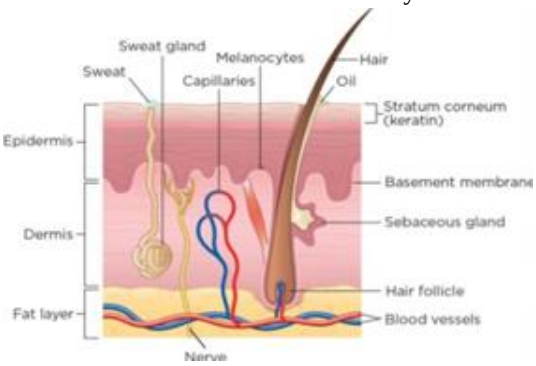
Others see our skin and can assess our mood, physical state and attractiveness.

Storage and synthesis:

Acts as a storage centre for lipids and water, as well as a means of synthesis of vitamin D byaction of UV on certain parts of the skin.

Water resistance:

The skin acts as a water-resistant barrier so essential nutrients aren't washed out of the body.



CREAM

Cream are the topical preparations which can be applied on the skin. Creams are defined as “viscous liquid or semi-solid emulsions of either the oil-in-water or water-in-oil type” dosage forms which consistency varies by oil and water. Creams are used for cosmetic purposes such as cleansing, beautifying, improving appearances, protective or for therapeutic function. These topical formulationsare used for the localized effect for the delivery of the drug into the underlying layer of the skin or themucous membrane.

1.1TYPES OF SKIN CREAM:

1.1.1They are divided into two types:

- Oil-in-Water (O/W) creams which are composed of small droplets of oil dispersed in a continuous phase, and an emulsion in which the oil is dispersed as droplets throughout the aqueous phase is termed an oil-in-water (O/W) emulsion.
- Water-in-Oil (W/O) creams which are composed of small droplets of water dispersed in a continuous oily phase. When water is the dispersed phase and an oil the dispersion medium, the emulsion is of the water-in-oil (W/O) type.

2. TURMERIC

(Curcuma longa)

Biological Source: Turmeric consist of dried as well as fresh “Rhizomes” of the plant Curcuma longa. (It contains not more than 5% of Volatile oil.)

Family: Zingiberaceae.

In India, turmeric is used as spices as well as a colouring agent. It is having various medicinal properties as anti-cancer, antidiabetic, antioxidant, anti-inflammatory, antibacterial, antiviral, wound healing, etc.

Chemically, curcumin is a diarylheptanoid, belonging to the group of curcuminoids, which are phenolic pigments responsible for the yellow colour of turmeric. Curcumin is a symmetric molecule, also known as Di feruloyl methane. The IUPAC name of curcumin is (1E,6E)-1,7-bis(4-hydroxy-3-methoxyphenyl)-1,6-heptadiene-3,5-dione, with chemical formula C21H20O6, and molecular weight of 368.38.

Curcuminoids and essential oil are the major components of turmeric, which have shown various bioactivities and promising results in various research investigations. Particularly, curcumin has demonstrated powerful efficacy as an anticancer agent, which possesses anti-inflammatory,

antioxidant, anti-Alzheimer, and anticancer activities in both preclinical and clinical studies. Moreover, curcumin has hepatoprotective, neuroprotective, cardioprotective, hypoglycaemic, antirheumatic, and antidiabetic activities

Structure Of Curcumin

2.1 Chemical Constituents of turmeric:

Major chemical constituents: curcumin, (curcumin 2 demethoxycurcumin), bis- demethoxycurcumin & cyclocurcumin It also contain 5% volatile oil.

Others chemical constituents are ketones & alcohols, cineole & zingiberene.

2.2Identification Test for Curcumin:

Test for Ketone:

Sodium Nitroprusside Test:

Dissolve sodium nitroprusside in distilled water in a clean test tube. Add 1ml of the givenorganic compound to be tested

Shake well and add sodium hydroxide solution dropwise. If there is the appearance of red colourthen the presence of ketone is confirmed.

Volatile oil:

- Drug + alc. Solution Sudan 3 gives Red Colour due to globules indicate presence ofvolatile oil.
- Drug + drop of tincture of alkane gives Red Colour.

b. Test for Carbohydrate:

- Molish test:

To the test solution add few drops of alcoholic alpha naphthol then add few drops of concentrated sulphuric acid through side of test tubes purple to violet colour ring appears at the junction.

- Barford test:

1ml of test solution Is heated with 1ml Barford reagent on water bath, if red cupricoxide is formed, monosaccharide is present. Disaccharide on prolong heating [about 10 min] may also cause reduction.

c. Test for Curcumin:

- Powder drug + Sulfuric acid gives crimson colour.
- Aqueous solution of turmeric + Boric acid gives Reddish brown colour which when addition alkali changes to greenish blue.
- Drug + acetic anhydride + Conc. Sulphuric acid gives Violet colour when this testobserve under UV light red fluorescence is seen.

Extraction Process of Curcumin From Turmeric

- Process flow chart of curcumin isolation

Coarsely crushed grinded powder extraction

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Extracted with ethylene dichioride for 4 hrs in extraction

unit at 50c to 60c Filtration

↓

Filtered the extract through Buchner funnel & collected in beaker for concentration

concentration

↓

Concentrated under vacuums at 50c to 60c up to 40% of raw herb crystallization Filtration

↓

Filtered the crystal through a centruifuge purification

↓

Separeated the ppt of curcumin through a centrifuge Drying

↓

Collected curcumin dried under vacume/oven

Grinding

↓

Grinded the dride curcumin through a grinder

↓

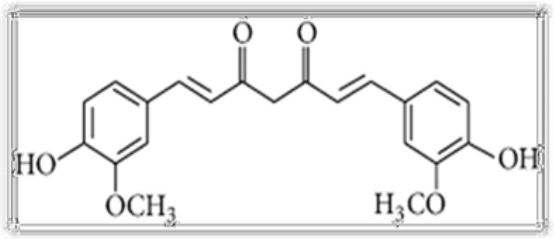
Curcumin (95%)

2.3PROCEDURE OF TURMERIC CREAM:

Extraction Of Curcumin (Soxhlet)

soxhlet apparatus

Simple Distillation



5.4 Ingredients used for Turmeric Cream (30gm):

S. No.	Ingredients	Quantity Given (%w/w)	Quantity Taken (%w/w)	Uses
1	Curcumin	1	0.3	Anti-inflammatory Anti-aging Cures Dermatitis
2	Stearic acid	20	6	Emulsifier Lubricant
3	Triethanolamine	3	0.9	PH adjusting agent Emulsion Stabilizer Surfactant
4	Liquid Paraffin	7	2.1	Base
5	Glycerine	20	6	Moisturizer
6	Almond oil	4	2	Nourishing, Emollient
7	Methyl paraben	0.04	0.012	Preservative
8	Ethylenediaminetetraacetic acid (EDTA)	0.2	0.06	Preservative
9	Water	Quantity sufficient	q.s.	vehicle

Factor = Quantity Taken / Quantity Given

d. Stearic acid is melted in a container by heating on a water bath. Almond oil is added.
e. Potassium hydroxide and methyl paraben is dissolved in water, glycerin is added. Purified ethanolic extract is added to the mixture and is heated to a temperature of about 75° C. This is aqueous phase.
f. Slowly aqueous phase is added to preheated (75° C) stearic acid and almond oil mixture with continuous stirring.
g. Perfume is added to the preparation when it attains a temperature of 40° C.
h. The cream is transferred to an appropriate container and labeled with necessary direction for use.

2.4EVALUATION PARAMETERS OF CREAMS:

a. Determination of pH:

The pH of the cream can be measured on a standard digital pH meter at room temperature by taking adequate amount of the formulation diluted with a suitable solvent in a suitable beaker.

b. Physical appearance:

Separability

The physical appearance of the cream can be observed by its colour, roughness and graded.

c. Spread ability:

Adequate amount of sample is taken between two glass slides and a weight of 100gm is appliedon the slides for 5 minutes. Spread ability can be expressed as

d. Viscosity:

Viscosity of formulated creams can be determined by using Brookfield Viscometer

e. Homogeneity:

The formulation was tested for the homogeneity by visual appearance and by touch.

f. Skin irritation test:

Mark an area of 1sq.cm on the left-hand dorsal surface. The cream was applied to the specified area and time was noted. Irritancy, erythema, enema was checked, if any, for regular intervals upto 24hrs and reported. Evaluation Parameters and Observation:

Consistency

Colour

Evaluation Parameters	Observations
Physical Apperance	Smooth in texture
Colour	Light yellowish
Washability	Easily washable
PH test	Ract 5.5
Consistency	Sami-solid
Grittiness	No particulates

PH Test

USES:

a. Moisturization & Nourishment
b. Spot removal
c. Softening & smoothing
d. Skin Brightening
e. Anti-Dullness

3. CONCLUSION

The purpose of this study was to develop an herbal cream. The formulated Curcumin containing moisturizing conditioning cream was evaluated for several physiochemical tests and the results were found according to the standard value. Curcumin is a natural pigment obtained from Curcuma longa with considered medicinal values. This herbal cream is one of the good alternatives in place of synthetic cream.

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