



# A Review On Pharmaceutical Preparation of Cold Cream

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## Abstract:

This study aimed to develop and evaluate the ( natural) herbal cosmetic products like-cold creams by using plant extracts containing aloe-vera and other extracts the cold cream was prepared by using water-in-oil method. The creams showed good consistency, spreading ability, pH, and no significant changes in physical properties. the emulsion slow evaporation of water was found to be cooling and soothing. The coldcreams were also found to be physico-chemically, mechanically, and microbiologically stable, with characteristics of a standard cosmeceutical formulation for skincare. The study concluded that these cold creams were a good attempt to incorporate naturally available ingredients like almond and were safe for public and societal use. Pharmaceutical cold creams are used for various functions, such as hydrating, makeup remover, beauty enhancer and also help in improvement appearance.

## I. INTRODUCTION OF COLD CREAM:

Cold cream are Cosmetics products used to enhance beautify and purify the outer skin, the term of cold cream has obtain from the Greek word of 'kosmesticos' meaning to adorn. Cold cream, a water-in-oil(w/o) nature is called emulsion, is a popular choice for its prolonged contact time, elegance, and non-irritating properties. It restores moisture to dry skin, eliminates waste materials, and cools the body. Galen was a Greek physician, developed or cultivate the formulization of cold cream in the 2nd (second) century using water, beeswax, and rose petals. the mostly cold creams can be used to mosturizing and hydrating to skin are also used to remove the sports of skin and create children's face paint.

## WHAT IS THE COLD CREAM :

Cold cream a water-in-oil (w/o) emulsion of water and oil, often containing carnauba wax, or paraffin wax and same agents, used as a moisturizer and cleanser to skin . It has been used for nearly 2000 years and is a Watering-oil (W/O) emulsion. It containscoconut oil, paraffin wax, methyl paraben, and rose water. Cold cream are used for skin treatments, makeup removal, and shaving due to its moisturizing properties.

## • TOPICAL DRUG DELIVERY

- The Medications are administered many routes, including trandermal(through skin) , tpical(on skin surface), mucosal(on mucous membranes), ocular(eye), nasal(inhalation), buccal (mouth), vaginal (rectal) to treat illnesses. Topical delivery system for treating skin disorders or general diseases, using semisolid formulations, foams, sprays, and medicated lotions.

## . BENEFITS OF TOPICAL DRUG DELIVERY (COLD CREAM):

- Avoidance of 1st pass metabolism.
- It is Conventional and easy to use.
- Self administration is possible.
- Efficacy can be achieved by minimizing the per day dose of medicine.
- Prevention the irritation of skin .
- Local bioavailability is improved.
- It reduces dose concentration and dosing frequency.
- It improves patient compliances and comfort.
- It is less costly to formulate..
- These are effective for allergic responses.
- Providing the hydration of skin

## IV. PHYSIOLOGY OF HUMAN SKIN

### • Epidermis:

The stratified, keratinized squamous epithelium in the epidermis, with palms and feet having the thickest layer, protects, produces new cells, maintains hydration, and contains melanin.

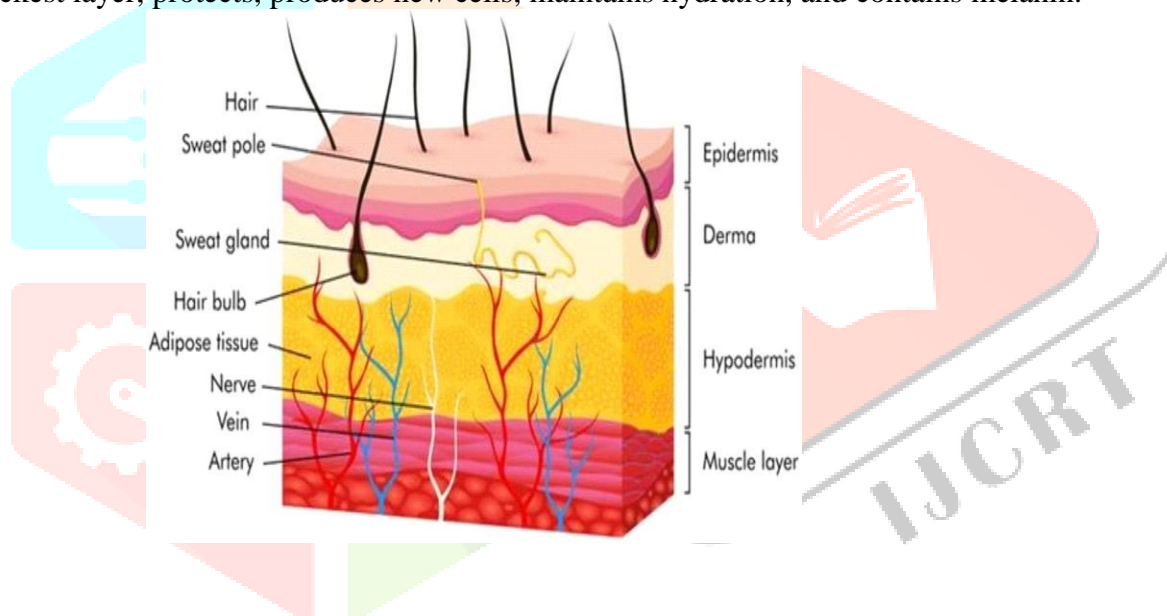


Fig. No-1 ( skin )

### Dermis:

The dermis, composed of connective tissue and elastic and collagen fibers, is responsible for tensile strength and elasticity. Stretch marks, or permanent striae, occur during pregnancy and obesity. Collagen fibers hold water together, causing wrinkles as they AGE

### Subcutaneous

The sebaceous gland is crucial for androgen processing and regulation. It contains enzymes for cholesterol conversion and can inactivate androgens. The sebaceous gland, particularly on the testosterone conversion. Hormones control the sebaceous gland's activity by attaching to nuclear androgen receptors

## V. THE 6 VITAL FUNCTIONS OF SKIN

- **Skin performs various functions**
- **PROTECTION** - It holds all of our organs in and protects them from outside invaders
- **ABSORPTION** - permits penetration and transportation of certain chemicals into the skin
- **SECRETION** - sebum is secreted through hair follicles to nourish our skin
- **EXCRETION** - sweating assists our bodies in expelling waste and cooling the skin.
- **HEAT REGULATION** - maintaining a stable internal body temperature.
- **SENSATION** - skin nerve endings transmit signals to the brain allowing us to feel the heat, cold, touch, pressure, pain and even an itch.

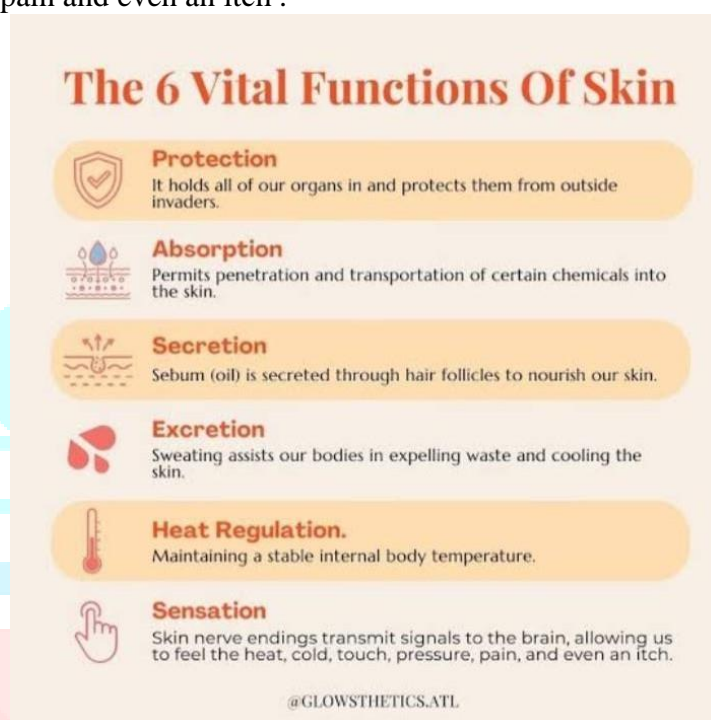


Fig. no-2 ( function of skin)

### Skin Diseases

**Skin diseases are conditions affecting the skin's surface, affecting the skin's function and appearance.**

- acne.
- alopecia areata.
- Epidadenitis bollosa.
- Ichthyosis.
- pemphigus.

### Cold Cream ( winter cream ):

- Cold cream is a skin smoothing and makeup removal product made from water and certain fats, often containing carnauba wax, paraffin wax and other ingredients
- Cold cream, also known as ceratum refrigerans, certain fats, usually carnauba wax and many scent agents are present.
- The cold cream are designed to provide the smoothness of skin and remove makeup..
- Cold cream, a popular skincare product, is a combination of water and oil, which evaporates upon

application, providing a cooling sensation.

- Cold cream a water-in-oil (W/O) emulsion, which present beeswax and other ingredients in high concentration, has a provide cooling effect on the skin, as seen in cold cream.
- Cold cream are cosmetic product a oil-based semisolid preparation containing coconut oil, paraffin wax, glycerin, aloe vera extract and rose water.
- This cosmetic is a hydrating cream with a mineral oil and oily in nature designed to calm and moisturising the skin.

## VI. THE COMMON HISTORY OF COLD CREAM PREPARATION

Before the 1st (first) century, The Druggists was prepare cold cream with the help of rose water and keep it chilled on ice for use as a topical skin cream. The name "cold cream" comes from the cooling sensation it produces when applied, which is why it is called "refrigerant." Galen, a Greek physician and chemist was creating the 1st (first) cold cream. Cold creams are ideal for treating dry skin, using as a natural hydrator and prevent dry skin. They are typically made with water in oil emulsions, which evaporate when apply on the skin, leaving residual rose water and coconut oil work as a solvent. cold cream is a term used to describe the sensation of numbness left on the skin after applying it. Early versions were not durable due to the deterioration of vegetable oils when combined with water. Cold creams with excess concentrations of mineral oil or olive oil were used as moisturizer or hydrator and were often marketed as beauty or night creams.

ANCIENT ORIGINS (2000 BCE - 500 CE) MIDDLE AGES

(500 - 1500 CE)

RENAISSANCE AND ENLIGHTENMENT (1500 - 1800 CE) INDUSTRIALIZATION

AND MASS PRODUCTION (1800 - 1900 CE) MODERN ERA (1900 CE - present)

## VII. COMMON INGREDIENTS USED IN THE PREPARATION OF COLD CREAM

Table 1- Common Ingredients Used In Cold Cream

• Formula:

Sr. No.	Ingredients	Quantity Given	Quantity Given (Factor x Qty given)	Role of Ingredients
1	Bees Wax	16 g		Emollient
2	Liquid Paraffin	50 g		Emollient
3	Borax	0.8 g		Emulsifying Agent
4	Water	33 g		Vehicle
5	Methyl Paraben	0.18 g		Preservative
6	Propyl Paraben	0.02 g		Preservative
7	Perfume	q.s.		Organoleptic Agent

$$\text{Factor} = \frac{\text{Required Quantity}}{\text{Quantity Given}}$$

□

**General Instruments are used in the preparation of cold cream :**

- Glass Measuring cylinder and pipettes
- Double boilers or heating mantles
- pH paper or pH meters
- Electric mixers (stand mixers)
- Glass or stainless steel mixing bowls
- Thermometer (digital or analog)
- Cooling baths (ice water baths)
- Whisks, spatulas and spoons

### □ Common raw materials used in cold cream :

Cold cream typically consist of a combination of various type of ingredients like- oil( minaral oil and coconut oil) , waxws ( paraffin wax and beeswax ), emulsifiers ( vitamin -E oil ), moisturizers ( aloe vera extract and rose water ), preservatives ( parabens, and ethylhexylglycerin ), PH adjusters ( citric acid ),

There should be the following components:

- WAXES-( beeswax, carnauba wax, candelilla wax, paraffin wax )
- OIL - (mineral oil, petroleum jelly, coconut oil, lanolin oil, sewwt almond oil )
- HUMECTANTS -( glycerin, sorbitol, honey, panthenol )
- PH ADJUSTERS - ( citric acid, sodium hydroxide (NaOH) )
- MOISTURIZERS - (aloe vera extract, green tea extract, rosewater )
- EMULSIFIERS - ( vitamin E oil, lanolin, glycerin )
- THICKENERS- ( silica, sodium hydroxide)

### Procedure of making Cold Cream:

- First of all we will wash all the operators with detergent
- After washing all operators will be dried in hot air oven.
- Weighing and blending: measure the all ingredients accordinh to the formula.
- Hating: melt waxes like - beeswax and add paraffin take in china disc mixde withthe help of glass rod and heated on water both at 70°C.
- Mixing: combine melted ingredients with water and emulsifiers (e.g lanolin, glycerin)
- Homogenization: blend mixture to ensure uniform consistency.
- cooling: allow mixture to cool and thicken.
  - Packaging: fill into containers ( tins,jars or tubes )



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Fig.no 3 - hot water both



Fig. No 4. Prepared Cold Cream



## VIII. THE GENRAL USES OF COLD CREAMS

Cold cream has been a steple in skincare routines for centuries, offering numerous benefits and uses. here are same of the most popular uses of cold ceam:

### SKINCARE USES -

- 1- Moisturizing - cole cream provides long-lasting hydration, leaving skin feeling soft, smooth, and supple .
- 2- Dry skin relief - cold cream helps to soothr and calm dry, chapped, or irritated skin.
- 3- Anti-aging- some cold cream contain anti aging ingredients, such as retionl, vitamin E or hyalironic acid, which help reduce fine lines, wrinkles and age spots.

### COSMETIC USES -

- 1- Makeup remover - cold cream can be used to gently before remove makeup, incliding eye makeup and lipstick.
- 2- Skin primer - applying a thin layer of cild cream before makeup can help create a smooth canvas for application.
- 3- Lip bam - cold cream can be used to moisturize and protect dey, chapped lips.

### USES -

- 1- Skin irritations - it help soothe and calm skin irritations, such as eczema, acne, ormonor cuts and scrapes.
- 2- Minor burns - it can helps to alleviate monor burn discomfort and promote skinhealing.

### OTHER USES-

- 1- Sheving cream - it can be used as s sheving cream to help lubricate and mosturizethe skin.
- 2- Massage - cold cream can be used as a massage medium to help reduce friction andpromote relaxation.



Fig no 5- direction to use cold cream

## IX. FUNCTIONS AND USES OF THE INGREDIENTS USED INTHE PREPARATION

□

### Bees Wax:



Fig.no. 6-Bees Wax

Beeswax is an antioxidant and essential ingredient in skin moisturisers and body creams, supporting moisturizing, softening, and cell repair. It serves as an emollient and humectant, acting increasing the thicknes of cold cream. Beeswax have a medication properties and wax are a best source of vitamin A. that commonly used in beauty products like moisturizers, body lotion, glosses, eye shadows, lipsticks, and body creams.

## Liquid Paraffin



Fig.no 7- ( Liquid paraffin )

Liquid paraffin is used in skin care and cosmetics to maintain moisture retention and prevent moisture loss. It is found in various beauty products and can be used as an emollient lotion to treat dry skin and reduce skin disease symptoms.

## Borax



Fig.no 8-( Borax)

Borax, a compound made from boric acid salt and sodium tetra borate, is an emulsifying agent that substances miscible. It maintains the pH of preparations and inhibits bacterial growth. Borax is commonly used in cosmetic creams, gels, and lotions, and is ideal for cleaner products. However, its alkaline nature may cause skin irritation.



## Methyl Paraben:



**Fig. No 9- ( methylparaben)**

Methyl paraben is a type of paraben used as a preservative to prevent the increase of harmful microbes in food and cosmetics. It is often combined with other types of parabens in various products, including food, medications, and cosmetics like makeup, moisturizer.

## X. COLD CREAM FOR WINTER ( COLD WEATHER):

Cold cream has experienced a modern renaissance for good reason-its hydrating properties. The cold weather causes dry skin, and cold creams are great for dry skin.

Cold cream is made by emulsifying water and oil. Since the cold cream recipe gets its name from the fact that it makes the skin feel cold when applied, the distinction between (w/o) water and oil is important to its preparation. This is because cold cream absorbs into the skin more slowly than water-based oil-based products. Agents are usually the four primary ingredients of cold cream.

Because water and oil are combined in about equal amounts, the cream can reach the epidermis outermost layer without penetrating your skin as deeply as water-based treatments.

### Ideal Characteristics of Cold Cream

- Its sensitization index ought to be low.
- The skin should not become irritated.
- It should be the perfect consistency to make application and removal from the container simple.
- Devoid of dusty elements.
- It must not be oily or discoloring.
- It should not change how the skin or membranes work.
- It must not cause dehydration.
- It should have a sophisticated appearance.

## XI. EVALUATION OF COLD CREAM

The quality of cold cream can be evaluated through several tests.

### • Morphological Evaluation:

This is the manual assessment of attributes according to its texture, flavor, and color.

**pH:** The pH meter was calibrated using a standard buffer solution, and 0.5 g of cream was weighed and dissolved in 50.0 ml of purified water.

**Spreadability test.** The spread ability of a cream on skin is measured by the time it takes for two slides to separate from the cream under a specific load. The spread ability improves with less time spent separating the slides. Two sets of standard-sized glass slides were used, and the cream was

uniformly compressed to form a thin layer. The spread ability the standard weight (30g) by the length of the glass slide.

**Stability Test:** The developed formulation was stored at different temperatures for a month in order to test its stability. Physical characteristics such as color, aroma, pH, consistency, and feel were assessed in the packed glass vials of formulation while they were kept at different temperatures, including room temperature and 40°C.

**Irritability test:** Identify a one (1)-square-centimeter area on the dorsal ( skin) surface of the left. After applying the cream to the specified area, the amount of time was noted. At regular intervals, presence irritation as observed for up to 24 hours.

- **Homogeneity:** Visual inspection and testing were done on the homogeneity.

Sr No.	Test Parameters	Observation	Inference
1	Color	Pale yellow	
2	Odour	Charecteristics	
3	Appearance and Homogeneity	Homogenous	Passes the test
4	Viscosity	4445m <sup>2</sup> /s (poise)	Passes the test
5	Spredability	5.2 g cm/ s	Passed the test
6	pH meter	PH- 7.05	Passed the test
7	Stability	Stable	-
8	Skin irritation test	No skin reaction	Passed the test
9	Antimicrobial activity	Microbial Inhibition	Passed the test

## XII. RESULT

- **Morphological Evaluation:**
- 

The displays a morphological analysis of cold cream. The formula was white. The generated formulations are perfect for cosmetic formulations due to their agreeable and well-liked flavor. Texture and smoothness met the requirements for cosmetic preparation.



- **pH :** The indicates that the pH is neutral.
- **Stability:**  
The stability findings were shown in the table. Under the specified stability parameters, no change in color, texture, smoothness, or smell was observed. According to the stability study, at room temperature.

- **Irritancy :**

The irritancy test results are shown in the table below. The formulation showed no signs of edema, redness, or irritation during irritancy tests. This formulation is safe to use on the skin.



**Spreadability:** The displaying the spreadability of cold cream revealed that.

- **Homogeneity:** The cold cream was sufficiently homogeneous.

### XIII. CONCLUSION

The study found that a polyherbal cold cream, developed from herbal extracts, is safe and effective for use. The cream showed good consistency, homogeneity, pH, and no phase separation. The use of Neem oil, Aloe Vera, and coconut oil in the cream also showed anti-bacterial effects. Herbal cold creams are popular skincare products with natural ingredients like herbs, plant extracts, and essential oils, known for their moisturizing and soothing properties. They are preferred by those seeking minimal synthetic additives and fewer side effects, making them appealing to individuals with sensitive skin or those who prefer natural skincare solutions. The study highlights the importance of using herbal products in personal care systems to improve patient compliance and safety.

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