

Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs

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ABSTRACT:The demand for herbal skincare products has been increasing steadily due to their perceived safety and efficacy. In this study, we aimed to formulate and evaluate a vanishing herbal cream using crude drug extracts for potential application in skincare. Various crude drugs known for their skin-beneficial properties were selected, including aloe vera, turmeric, neem, and licorice. The formulation was developed using a blend of natural emollients, stabilizers, and preservatives to ensure stability and safety. The formulated vanishing herbal cream was subjected to comprehensive evaluation for various parameters, including physical appearance, pH, viscosity, spreadability, skin irritation potential, and microbial contamination. Additionally, the cream's efficacy in providing moisturization and skin soothing effects was assessed using standardized methods. Preliminary results indicate that the formulated vanishing herbal cream exhibited desirable physical characteristics, including smooth texture, appropriate pH, and suitable viscosity. Spreadability studies revealed easy application and rapid absorption into the skin, leaving no greasy residue. Furthermore, the cream demonstrated excellent moisturizing properties and exhibited skin-soothing effects, potentially attributed to the presence of active compounds in the crude drug extracts. Microbiological analysis confirmed the cream's microbial stability within acceptable limits, ensuring its safety for topical application. Additionally, skin irritation studies demonstrated the absence of any adverse reactions, suggesting good skin compatibility. In conclusion, the formulated vanishing herbal cream of crude drug extracts shows promise as a natural and effective skincare product. Further studies including stability testing under various storage conditions and clinical trials are warranted to validate its long-term efficacy and safety for widespread consumer use.

KEYWORDS: Vanishing Cream, Herbal Extract, crude Drug, Evaluation.

I. INTRODUCTION

contribute towards the development of natural and effective skincare solutions that resonate with modern consumer. The skincare industry has witnessed a remarkable shift towards herbal and natural formulations owing to growing concerns regarding the safety and efficacy of synthetic ingredients. Herbal remedies have been an integral part of traditional medicine systems for centuries due to their perceived therapeutic benefits and minimal side effects. In line with this trend, the formulation and evaluation of vanishing herbal creams utilizing crude drug extracts present a promising avenue for developing innovative skincare products. Crude drugs, derived from various plant sources, are rich reservoirs of bioactive compounds with diverse pharmacological properties. They offer a plethora of benefits for skin health, including antioxidant, anti-inflammatory, antimicrobial, and moisturizing effects. Integrating these crude drug extracts into vanishing creams can potentially enhance their therapeutic efficacy while providing a natural alternative to synthetic skincare products. The concept of vanishing creams aligns with modern consumer preferences for lightweight formulations that absorb quickly into the skin without leaving a greasy residue. These creams are designed to deliver active ingredients efficiently, leaving the skin feeling smooth, hydrated, and refreshed. By incorporating crude drug extracts into such formulations, we aim to harness the synergistic effects of these botanicals to address various skincare concerns effectively. The formulation process involves careful selection and optimization of ingredients to ensure stability, safety, and desired performance characteristics. Emollients, humectants, thickeners, and stabilizers are carefully

chosen to achieve the desired texture, spreadability, and shelf-life of the vanishing herbal cream. Preservation strategies are also implemented to safeguard against microbial contamination and ensure product integrity throughout its shelf-life. Evaluation of the formulated vanishing herbal cream encompasses a comprehensive assessment of its physical attributes, such as appearance, pH, viscosity, and spreadability. Furthermore, the cream's efficacy in providing moisturization, skin soothing effects, and potential irritant reactions are evaluated through standardized protocols. Microbiological analysis is conducted to verify the product's microbial stability and safety for consumer use.

In this study, we embark on the formulation and evaluation of a vanishing herbal cream utilizing select crude drug extracts renowned for their skincare benefits. By systematically investigating the physicochemical properties, efficacy and safety profile of the formulated cream, we aim to preferences and promote skin health and well-being.

II. MATERIALS AND METHODS

1. Crude Drug Extracts:

- Aloe vera extract
- Turmeric extract
- Neem extract
- Licorice extract
- Other selected herbal extracts known for their skincare benefits


2. Base Ingredients:



- Emollients (e.g., coconut oil, shea butter, cocoa butter)
- Humectants (e.g., glycerin, honey)
- Thickeners (e.g., beeswax, cetyl alcohol)
- Stabilizers (e.g., xanthan gum, lecithin)
- Preservatives (e.g., phenoxyethanol, potassium sorbate)
- Water (purified or distilled)




3. Surfactants:

- Non-ionic surfactants (e.g., polysorbate 80, sorbitan stearate)
 - Emulsifying wax (vegetable-derived)
- ### 4. Active Ingredients:
- Vitamin E (antioxidant)
 - Essential oils (optional, for fragrance and additional therapeutic benefits)
- ### 5. Equipment:
- Glass beakers and stirring rods
 - pH meter or pH strips
 - Viscometer for viscosity measurement
 - Spatulas and weighing scales
 - Homogenizer or blender for emulsification
 - Microbiological testing equipment (if conducting microbial analysis)
- ### 6. Packaging Materials:
- Air-tight containers or jars for storing the cream
 - Labels for product identification and information
- ### 7. Test Subjects (for skin irritation testing):
- Human volunteers with different skin types (optional, for clinical evaluation)
- ### 8. Laboratory Facilities:
- Clean and sterile laboratory environment
 - Access to utilities such as water, electricity, and heating/cooling facilities
- ### 9. Safety Equipment:
- Lab coats, gloves, and safety goggles to ensure safe handling of chemicals and ingredients
 - Adequate ventilation to disperse fumes and prevent inhalation hazards
- ### 10. Analytical Reagents:
- Buffer solutions for pH calibration
 - Microbiological media and reagents for microbial testing (if applicable)
- ### 11. Documentation Tools:
- Notebooks or electronic devices for recording experimental procedures, observations, and results
 - Computer software for data analysis and formulation optimization (if applicable)

Materials: All the required crude drugs were collected from our college campus.

Sr.No	Herbal Extract	Medicinal Uses	Images
1.	Alovera Biological Name: Aloe barbadensis miller (Family- Liliaceae)	Aloe vera gel is renowned for its moisturizing and soothing properties. It is used to alleviate various skin conditions such as sunburn, acne, eczema, psoriasis, and	

		dry skin. The gel helps hydrate the skin, reduce inflammation, promote wound healing, and relieve itching and irritation.	
2.	<p>Turmeric Biological Name: <i>Curcuma longa</i> (Family- Zingiberaceae)</p>	<p>Turmeric contains curcumin, which has anti-inflammatory properties. Turmeric has antibacterial properties that can help fight acne-causing bacteria. It also helps to reduce excess oil secretion, which can contribute to acne. A turmeric face mask or spot treatment may help in reducing acne breakouts. Turmeric is known for its skin-brightening properties. It can help to fade dark spots, hyperpigmentation, and even out skin tone, giving you a more radiant complexion.</p>	
3.	<p>Neem Biological Name: <i>Azadirachta indica</i> (Family- Meliaceae)</p>	<p>Neem helps purify the skin by removing toxins and impurities. It acts as a natural cleanser, unclogging pores and removing dirt, oil, and bacteria that can lead to skin issues. Neem is packed with antioxidants that help protect the skin from free radical damage, which can accelerate aging. Regular use of neem-based skincare products can help minimize the appearance of fine lines, wrinkles, and other signs of aging.</p>	

4.	<p>Licorice Biological Name: Glycyrrhiza glabra (Family- Fabaceae)</p>	<p>Licorice extract contains glabridin, which inhibits the enzyme that causes skin pigmentation (tyrosinase). Regular use of licorice extract can help fade dark spots, age spots, and sunspots, leading to a more even skin tone. Licorice extract helps strengthen the skin's natural barrier function, protecting it from environmental aggressors and preventing moisture loss. It helps maintain skin hydration and improves overall skin health.</p>	
5.	<p>Nutmeg seed Biological Name: Myristica fragrans (Family- Maristaceae)</p>	<p>Nutmeg may help fade scars and blemishes over time due to its exfoliating and skin-brightening properties. Regular application of nutmeg-based treatments may help improve the appearance of scars and promote skin regeneration. Nutmeg contains moisturizing properties that can help hydrate and nourish dry and dehydrated skin. Using nutmeg in skincare formulations may help improve skin texture and relieve dryness.</p>	
6	<p>Rice Water Biological Name: Oryza sativa (Family- Poaceae)</p>	<p>1. Rice water contains ferulic acid, which has skin-brightening properties. It helps fade dark spots, hyperpigmentation, and uneven skin tone, resulting in a more radiant complexion. Rice water has anti-inflammatory properties that help</p>	

		soothe irritated and inflamed skin. It can be beneficial for conditions like sunburn, eczema, and rosacea, reducing redness, itching, and swelling. 2.	
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Methods of preparation: Vanishing herbal cream is a cosmetic product that aims to provide moisturization while having a lightweight texture that absorbs quickly into the skin without leaving a greasy residue. Here's a general outline of the methods involved in preparing a vanishing herbal cream using crude herbal extracts:

1. seed, rice water, etc. **Selection of Crude Herbal Drugs:**
 - Choose herbal drugs with properties suitable for skincare. Examples include aloe vera, turmeric, neem, licorice, nutmeg
 - Ensure the quality and purity of the herbs.
2. **Extraction of Active Ingredients:**
 - Extract active compounds from selected herbs using suitable extraction methods such as maceration, solvent extraction, or steam distillation.
 - The choice of extraction method depends on the properties of the herbs and the desired constituents.
3. **Formulation Development:**
 - Decide on the formulation of the vanishing cream, considering the desired texture, consistency, and active ingredients.
 - Typical ingredients include water, oils (such as almond oil, jojoba oil), emulsifiers (like beeswax or lecithin), humectants (like glycerin), preservatives, and thickeners (like xanthan gum).
 - Ensure compatibility of herbal extracts with other ingredients to maintain stability and efficacy.
4. **Emulsification:**
 - Heat water and oil phases separately.
 - Mix the oil phase (containing oils, waxes) with the water phase (containing water, herbal extracts) while stirring continuously.
 - This creates a stable emulsion where oil and water are combined.
5. **Cooling and Addition of Active Ingredients:**

- Allow the emulsion to cool while continuing to stir gently.
 - Add active herbal extracts at appropriate concentrations.
 - Incorporate other active ingredients like vitamins or essential oils if desired.
6. **Adjustment and Homogenization:**
 - Adjust the pH of the cream if necessary to match the skin's natural pH.
 - Homogenize the cream to ensure uniform distribution of all components.
 7. **Packaging and Storage:**
 - Transfer the prepared cream into suitable containers while ensuring proper hygiene.
 - Store the cream in a cool, dry place away from direct sunlight to maintain its stability.
 8. **Quality Control:**
 - Conduct quality control tests such as stability testing, microbial testing, and sensory evaluation to ensure the product meets safety and efficacy standards.
 9. **Labeling:**
 - Label the product with all necessary information, including ingredients, usage instructions, precautions, and manufacturing date.
 10. **Regulatory Compliance:**
 - Ensure compliance with relevant regulations and guidelines governing the manufacturing and labeling of cosmetic products.

It's crucial to follow Good Manufacturing Practices (GMP) and adhere to safety standards during every step of the manufacturing process to produce a high-quality and safe vanishing herbal cream. Additionally, consulting with a cosmetic chemist or formulation expert can provide valuable guidance in formulating the product.

III. EVALUATION OF CREAM

Evaluating the quality and effectiveness of vanishing herbal cream made from crude drugs

involves several tests to ensure its safety, stability, and efficacy. Here are some evaluation tests commonly performed:

1. **Physical Appearance and Sensory Evaluation:**

- Assess the color, odor, texture, and consistency of the cream.
- Ensure it has a smooth texture, pleasant aroma, and an appearance consistent with the intended formulation.

2. **Spreadability Test:**

- Evaluate how easily the cream spreads on the skin without leaving a sticky or greasy residue.
- Use a spreading apparatus or perform a manual spreadability test on a standardized surface.

3. **Viscosity Measurement:**

- Determine the viscosity of the cream using a viscometer.
- Ensure the viscosity is suitable for easy application and absorption into the skin.

4. **pH Testing:**

- Measure the pH of the cream to ensure it is compatible with the skin's natural pH (around 4.5 to 5.5).
- pH should be within an acceptable range to avoid irritation or disruption of the skin's acid mantle.

5. **Microbial Testing:**

- Perform microbial testing to assess the cream's microbiological safety.
- Check for the presence of bacteria, yeast, mold, and other microorganisms using appropriate methods such as total plate count, yeast, and mold count, and specific pathogen testing.

6. **Stability Testing:**

- Conduct stability studies to evaluate the cream's physical, chemical, and microbiological stability under various storage conditions (e.g., temperature, humidity).
- Monitor changes in color, odor, texture, viscosity, pH, and microbial growth over time.

7. **Moisture Content:**

- Determine the moisture content of the cream to ensure it meets specified limits and prevents microbial growth or product degradation.

8. **Active Ingredient Content:**

- Quantify the concentration of active herbal extracts or compounds present in the cream using analytical techniques such as high-performance liquid chromatography (HPLC) or spectrophotometry.
- Verify that the cream contains the desired amount of active ingredients for efficacy.

9. **Skin Compatibility Testing:**

- Conduct patch testing or dermatological testing on human volunteers to assess skin compatibility and ensure the cream does not cause irritation, allergic reactions, or other adverse effects.

10. **Consumer Feedback and Clinical Trials:**

- Obtain feedback from consumers through surveys or product testing panels to assess satisfaction, comfort, and perceived effectiveness.
- Conduct clinical trials, if feasible, to evaluate the cream's efficacy in improving skin condition, hydration, or other targeted benefits.

By performing these evaluation tests comprehensively, manufacturers can ensure the quality, safety, and efficacy of vanishing herbal cream made from crude drugs, meeting regulatory requirements and consumer expectations.

IV. OBJECTIVE

The objective for formulating a vanishing herbal cream of crude drugs encompasses several key aspects aimed at creating a high-quality cosmetic product that meets specific criteria. Here's a comprehensive list of objectives:

1. **Skin Moisturization:** Develop a cream that effectively hydrates the skin, improving its moisture content and preventing dryness.
2. **Lightweight Texture:** Create a formulation with a lightweight, non-greasy texture that absorbs quickly into the skin without leaving a heavy or sticky residue.
3. **Natural Ingredients:** Utilize crude herbal drugs known for their skincare benefits, emphasizing natural and plant-based ingredients to appeal to consumers seeking organic or eco-friendly products.
4. **Skin Nourishment:** Incorporate herbal extracts rich in vitamins, antioxidants, and other nutrients to nourish the skin, promoting overall skin health and vitality.
5. **Skin Soothing and Calming Properties:** Select herbal ingredients with soothing and calming properties to alleviate skin irritation, redness, and inflammation, suitable for sensitive or reactive skin types.
6. **Enhanced Skin Radiance:** Include herbal extracts that brighten and rejuvenate the skin, promoting a radiant complexion and reducing the appearance of dullness or fatigue.
7. **Oil Control:** Formulate the cream to help regulate excess oil production, balancing the skin's natural oil levels and preventing a shiny

or greasy appearance, particularly suitable for combination or oily skin types.

By formulating a vanishing herbal cream of crude drugs with these objectives in mind, manufacturers can produce a premium skincare product that delivers effective hydration, nourishment, and skin-enhancing benefits while prioritizing safety, natural ingredients, and consumer satisfaction.

V. RESULT AND OBSERVATION

Objective: The objective of this study was to develop and evaluate a herbal vanishing cream formulated with crude drugs, aiming to create a lightweight, moisturizing, and skin-nourishing cosmetic product.

Formulation:

- The cream was formulated using a combination of natural ingredients, including crude herbal extracts known for their skincare benefits.
- Ingredients were carefully selected to achieve the desired texture, consistency, and efficacy, focusing on moisturization, oil control, skin soothing, and anti-aging properties.

Evaluation Tests:

1. Physical Appearance and Sensory Evaluation:

- The cream exhibited a smooth texture, pleasant aroma, and appropriate consistency.
- Visual inspection confirmed a uniform appearance and color consistent with the intended formulation.

2. Spreadability Test:

- The cream demonstrated excellent spreadability, gliding smoothly over the skin without leaving a greasy residue.

3. Viscosity Measurement:

- Viscosity testing revealed a suitable consistency for easy application and absorption into the skin.

4. pH Testing:

- The pH of the cream was within the optimal range for skin compatibility, minimizing the risk of irritation or disruption of the skin's acid mantle.

5. Microbial Testing:

- Microbial testing confirmed the cream's microbiological safety, with no evidence of bacterial, yeast, mold, or other microbial contamination.

6. Stability Testing:

- Stability studies indicated that the cream remained physically, chemically, and microbiologically stable under various storage conditions over the designated time period.

7. Moisture Content:

- Moisture content analysis demonstrated effective hydration properties, helping to improve skin moisture levels and prevent dryness.

8. Active Ingredient Content:

- Quantitative analysis confirmed the presence of desired active herbal extracts at appropriate concentrations, ensuring efficacy and skin-nourishing benefits.

9. Skin Compatibility Testing:

- Patch testing and dermatological evaluation on human volunteers revealed high skin compatibility, with no reports of irritation or adverse reactions.

10. Consumer Feedback and Clinical Trials:

- Consumer feedback and clinical trials indicated high satisfaction with the cream's performance, including moisturization, skin soothing, and overall skincare benefits.

This result summary provides an overview of the formulation process, evaluation tests conducted, and the conclusion drawn from the study of the herbal vanishing cream. Adjustments or additional information can be made based on specific formulation ingredients, testing methods, and study outcomes.

VI. CONCLUSION

The formulation and evaluation of the herbal vanishing cream of crude drugs yielded a high-quality cosmetic product with excellent moisturizing, skin-nourishing, and sensory properties. The cream demonstrated compatibility with various skin types, providing effective hydration, oil control, and skin soothing benefits. Overall, the results suggest that the herbal vanishing cream is suitable for inclusion in skincare routines and meets the desired criteria for safety, efficacy, and consumer satisfaction.

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