

Moisturizing Lotion Using Aloe Vera Gel and Shea Butter

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Abstract—The development of natural, plant-based skincare formulations has gained significant attention due to increasing consumer demand for safe, effective, and environmentally friendly cosmetic products. This review focuses on moisturizing lotion formulations incorporating Aloe vera gel and Shea butter, two widely used natural ingredients known for their hydrating, soothing, and skin-repairing properties. Aloe vera gel contains bioactive compounds such as polysaccharides, vitamins, and amino acids that enhance moisture retention, promote wound healing, and reduce skin inflammation. Shea butter, rich in fatty acids and triglycerides, contributes to restoring the skin's lipid barrier, improving elasticity, and providing long-lasting hydration. This article consolidates current research findings on the physicochemical characteristics, functional properties, and synergistic effects of these ingredients when used in moisturizing lotions. The review also discusses formulation considerations, including emulsification techniques, optimal ingredient ratios, stability parameters, pH adjustment, and the selection of compatible preservatives and emulsifiers for natural formulations. Additionally, the sensory attributes, rheological behavior, and consumer acceptability of Aloe-vera- and Shea-butter-based lotions are examined. Furthermore, the article highlights the antimicrobial and antioxidant activities of both ingredients, which contribute to product stability and enhance skin protection against environmental stressors. Safety evaluations, potential allergenicity, and regulatory aspects relevant to natural cosmetic formulations are also addressed. Overall, the review emphasizes the potential of Aloe vera gel and Shea butter as key components in moisturizing lotions, demonstrating their combined ability to improve skin hydration, texture, and overall skin health. This synthesis provides a foundation for future research and formulation advancements in natural cosmetic product development.

Index Terms—Aloe vera gel, Shea butter, moisturizing lotion, natural cosmetics, skin hydration, formulation development, phytochemicals, emulsion stability, cosmetic safety.

I. INTRODUCTION

The increasing awareness of the potential adverse effects of synthetic chemicals used in cosmetic formulations has led to a global shift toward natural skincare ingredients. Consumers today demand cosmetic products that are not only effective but also safe, biocompatible, and environmentally sustainable. Moisturizers, in particular, form an essential component of daily skincare routines, as maintaining adequate skin hydration is crucial for overall skin barrier integrity, elasticity, and protection against environmental stressors. Among the wide array of natural moisturizing agents, Aloe vera gel and Shea butter have emerged as exceptionally valuable due to their rich phytochemical profiles and well-documented dermatological benefits. Aloe vera gel is renowned for its hydrating, soothing, and wound-healing properties. Its unique polysaccharides, primarily acemannan, facilitate water retention in the stratum corneum, helping maintain skin moisture throughout the day. Additionally, Aloe vera possesses anti-inflammatory compounds that help alleviate irritation, redness, and skin dryness. On the other hand, Shea butter, derived from the nuts of *Vitellaria paradoxa*, is rich in unsaponifiable lipids, essential fatty acids, and vitamins A and E. These constituents make Shea butter an excellent emollient capable of restoring the skin's natural barrier function and preventing transepidermal water loss (TEWL). Together, these two natural ingredients offer a complementary and synergistic effect when incorporated into moisturizing lotions, addressing

both hydration and barrier repair. The combined use of hydrophilic Aloe vera gel and lipophilic Shea butter offers formulators an opportunity to design balanced emulsions that nourish the skin while maintaining desirable sensory properties. As consumer preferences evolve toward “green,” sustainable, and ethically sourced cosmetic products, studying the formulation aspects of moisturizing lotions enriched with Aloe vera and Shea butter becomes essential. Their widespread availability and compatibility with modern cosmetic science further reinforce their potential in innovative skin hydration solutions. This review aims to consolidate scientific findings and formulation considerations surrounding their use, thereby guiding future advancements in natural moisturizer development.

Phytochemical Composition of Aloe Vera Gel and Its Dermatological Importance

Aloe vera (*Aloe barbadensis* Miller) is one of the most extensively studied medicinal plants due to its rich composition of biologically active compounds. The inner gel of the Aloe leaf contains over 75 bioactive constituents, including polysaccharides, vitamins, enzymes, amino acids, minerals, and phenolic compounds. Among these, acemannan, a long-chain acetylated polysaccharide, plays a central role in providing moisturizing and film-forming properties that help retain water on the skin's surface. This natural humectant enhances the hydration levels of the stratum corneum, making Aloe vera an ideal ingredient in moisturizing formulations. Beyond hydration, Aloe vera gel exhibits significant anti-inflammatory and antioxidant activities. Compounds such as C-glucosyl chromone and bradykinase contribute to reducing inflammation, making the gel suitable for sensitive or irritated skin. Aloe's antioxidant components vitamin C, vitamin E, and various phenolic acids help neutralize free radicals, thereby preventing oxidative damage associated with premature aging. Another noteworthy characteristic of Aloe vera is its ability to promote skin regeneration. The presence of gibberellins and auxins accelerates cell proliferation and wound healing, which explains the plant's long-standing use in treating burns and minor abrasions.

The gel's molecular structure allows it to penetrate deeper layers of the epidermis, making it highly effective as both a hydrating and therapeutic agent.

When used in lotions, Aloe vera not only provides immediate moisturization but also enhances long-term skin health through continuous nutrient delivery. Additionally, Aloe vera contributes to improved lotion spreadability, lighter texture, and enhanced user sensory experience due to its aqueous consistency. Understanding the phytochemical richness and dermatological significance of Aloe vera gel is crucial for developing optimized moisturizing lotion formulations. Its multifunctional properties hydration, healing, and protection make it an indispensable component in natural skincare products, especially those aimed at treating dry, irritated, or environmentally stressed skin.

Functional Role of Shea Butter in Moisturizing Lotion Formulations

Shea butter is obtained from the kernels of the African Shea tree and has been used for centuries for its moisturizing, healing, and protective properties. Chemically, it is composed of triglycerides, unsaponifiable matter, essential fatty acids (oleic, stearic, linoleic, and palmitic acids), and bioactive compounds including tocopherols (vitamin E), catechins, and triterpenes. These components play a crucial role in restoring the skin's hydrolipidic barrier, enhancing moisture retention, and protecting the skin from external aggressors such as UV radiation, pollution, and harsh climatic conditions. Shea butter acts primarily as an emollient, filling the gaps between skin cells and making the surface smoother, softer, and more flexible. Its high stearic and oleic acid content ensures prolonged moisturization by forming a protective lipid layer on the skin, minimizing transepidermal water loss. The butter's unsaponifiable fraction contributes to its anti-inflammatory and antioxidant activities, making it suitable for dry, sensitive, or eczema-prone skin. Moreover, Shea butter possesses mild UV-stabilizing properties, adding an additional protective benefit when used in daily skincare products.

In moisturizer formulations, Shea butter enhances product stability, viscosity, and texture. Its semi-solid nature at room temperature helps in creating a stable oil-in-water emulsion and contributes to the lotion's creamy consistency. Additionally, its compatibility with various emulsifiers and natural oils makes it a versatile ingredient for natural and organic skincare formulations. Shea butter also improves the sensory

profile of lotions by imparting richness, smoothness, and long-lasting hydration without leaving a greasy residue, especially when properly balanced with aqueous components like Aloe vera gel. Understanding the functional contributions of Shea butter is essential for designing effective moisturizing products. Its lipid-replenishing, repairing, and protective properties complement the humectant characteristics of Aloe vera gel, making the combination ideal for holistic skin hydration and nourishment.

Rationale for Combining Aloe Vera and Shea Butter in Moisturizing Lotions

The synergistic combination of Aloe vera gel and Shea butter presents a scientifically grounded approach to designing high-performance moisturizing lotions. Aloe vera, being water-rich and hydrophilic, provides immediate hydration and supports skin regeneration, while Shea butter's lipophilic nature delivers deep nourishment and enhances barrier repair. Together, they create a balanced moisturizing system that addresses both surface hydration and long-term moisture retention. From a formulation standpoint, combining these ingredients allows for the development of stable emulsions with desirable rheological properties. Aloe vera contributes to the lightweight, spreadable nature of the lotion, while Shea butter enhances viscosity, creaminess, and occlusivity. This complementary functionality improves the sensory attributes of the product, making it suitable for various skin types including dry, combination, and sensitive skin.

Biochemically, the ingredients support each other by offering a broader spectrum of skin benefits. Aloe's polysaccharides form a hydrating film on the skin, while Shea butter's fatty acids fortify the lipid matrix of the stratum corneum. The presence of antioxidants, anti-inflammatory compounds, and vitamins in both ingredients further boosts their therapeutic potential. Studies suggest that combining humectants with emollients improves overall moisturizing effectiveness compared to using either type alone, which further supports the rationale for integrating Aloe vera and Shea butter in skincare formulations. Moreover, the rising demand for natural, sustainable, and plant-based skincare products aligns well with the use of Aloe vera and Shea butter. Both ingredients are biodegradable, abundant, and widely accepted in

global cosmetic markets. Their historical use in traditional medicine, coupled with growing scientific validation, increases consumer trust and positions formulations based on these ingredients as premium yet accessible skincare options.

II. LITERATURE REVIEW AND DATA COLLECTION

1. Cita & Ka'arayeno (2025) Aloe Vera and Shea Butter Gel Lotion: A Formula for Skin Hydration

This recent observational study developed a gel-lotion formulation containing 75% Aloe vera gel, 12.5% shea butter, glycerin, xanthan gum, a preservative, and a fragrance oil. The product was evaluated for physical characteristics (pH, homogeneity, spreadability), consumer acceptability (hedonic test), skin irritation, and hydration. The authors reported a pH of 5, smooth texture, and a spreadability of about 6 cm. In an irritation test, 96.3% of the 27 participants reported no irritation. Most importantly, application led to a significant increase in skin moisture: average skin moisture jumped from < 30% (dry) to ~38.7% after 1 minute, and stayed elevated at 34–35% even at 3- and 5-minutes post-application. This study provides direct empirical support for the hydrating efficacy of combining Aloe vera gel and shea butter in a topical formulation.

2. Dal'Belo, Rigo Gaspar & Maia Campos (2006) Moisturizing Effect of Cosmetic Formulations Containing Aloe vera Extract

In this controlled human study, the authors tested stable cosmetic formulations with varying amounts of freeze-dried Aloe vera extract (0.10%, 0.25%, 0.50%) to evaluate their effect on stratum corneum water content and transepidermal water loss (TEWL). After a single application, the 0.25% and 0.50% Aloe formulations significantly raised skin water content, and after two weeks of daily use, even the lowest concentration (0.10%) had similar moisturizing effects. Importantly, TEWL remained unchanged, suggesting that the increase in hydration was due to Aloe's humectant mechanism rather than barrier occlusion. The authors concluded that Aloe vera extract is an effective natural moisturizing agent.

3. Zhu, J. (2024) Study on the Application of Aloe Vera in Cosmetology and Its Multifunctional Effects

This review article examines recent research (up to 2024) on Aloe vera's cosmetic uses, emphasizing its moisturizing, anti-aging, antioxidant, and UV-protective properties. The paper discusses how Aloe's bioactive constituents' polysaccharides, vitamins, phenolic compounds contribute not only to skin hydration but also to cellular regeneration and defense against oxidative stress. The author highlights challenge in formulation (e.g., stability, preserving activity) and suggests future directions like nano-formulations or biopolymer-based systems to enhance delivery and efficacy. This article helps situate Aloe vera's role in modern cosmetic science and supports your discussion on biological benefits, formulation challenges, and future prospects. It also gives a broader perspective on non-moisturizing functions, which may strengthen your review.

III. METHODOLOGY / MATERIALS AND METHODS

Material

A. Raw Materials:

The formulation of moisturizing lotions incorporating Aloe vera gel and Shea butter requires the careful selection of high-quality raw materials from reliable suppliers. In reviewing existing literature, preference is given to organic, unrefined, and cold-processed ingredients, as they retain the highest concentration of bioactive compounds. Aloe vera gel must be sourced either as fresh gel extracted from the inner fillet of Aloe barbadensis Miller leaves or as commercially available decolorized gel, which is stabilized and purified to reduce anthraquinone content. Shea butter, ideally obtained from Vitellaria paradoxa kernels, may be used in unrefined or refined form, though unrefined butter contains more unsaponifiable matter, vitamins, and antioxidants. Typical secondary ingredients reviewed include emulsifiers, humectants, preservatives, and stabilizers, each contributing to the lotion's overall performance.

B. Secondary Ingredients:

1. Emulsifiers

Studies commonly reference the use of non-ionic emulsifiers such as cetostearyl alcohol, glyceryl

stearate, polysorbates, or natural emulsifiers like lecithin and cetearyl glucoside. These emulsifiers promote a stable oil-in-water (O/W) emulsion, essential for combining hydrophilic Aloe gel with lipophilic Shea butter.

2. Humectants

Ingredients like glycerin, propylene glycol, or sorbitol are frequently incorporated to enhance water retention and synergize with Aloe's inherent humectancy.

3. Preservatives

Given the high-water content, most formulations require mild but effective preservatives such as phenoxyethanol, benzoic acid, or natural preservative blends (e.g., gluconolactone, sodium benzoate) to maintain microbiological stability.

4. Stabilizers and Thickeners

Commonly reviewed stabilizers include carbomers, xanthan gum, cetyl alcohol, or natural gums, which contribute to viscosity and improve emulsion stability.

C. Review of Extraction and Processing Methods:

Studies indicate that Aloe vera gel is commonly extracted manually by removing the epidermal rind and collecting the inner mucilaginous leaf pulp. This gel is then subjected to filtering, pasteurization, and stabilization. Similarly, Shea butter is extracted through traditional hand processing, mechanical pressing, or solvent extraction, followed by purification steps such as degumming, deodorization, and neutralization. Reviewing these methods helps evaluate how processing influences the physicochemical properties of the final formulation, including texture, stability, and nutrient retention

D. Equipment Used:

The following instruments and apparatus are typically utilized in the formulation of Lotion:

1. Heating Mantles or Water Baths

Used to heat the oil and water phases to uniform temperatures (typically 65–75°C), ensuring proper emulsification and sanitization.

2. Homogenizers or High-Shear Mixers

These instruments provide mechanical force to disperse oil droplets into the aqueous phase, creating a fine, stable emulsion and improving lotion smoothness.

3. Stirring/Agitator Systems

Magnetic stirrers or paddle stirrers maintain gentle mixing during cooling to prevent phase separation and ensure uniform texture.

4. pH Meters

Used to check and adjust the pH of Aloe vera-based formulations to ensure skin compatibility (usually pH 4.5–6.5).

5. Viscosity Measuring Instruments

Devices such as Brookfield viscometers are commonly used to determine lotion consistency and predict consumer sensory experience.

6. Microbiological Testing Equipment

Autoclaves, incubators, and sterile sampling kits are used in many reviewed studies to monitor microbial load and product safety.

Formulation Methodology from Literature

A. Preparation of Aloe Vera Gel Existing literature outlines two main approaches:

1. Fresh Gel Processing – Aloe leaves are washed, sanitized, filleted, and the inner gel is separated, crushed, and filtered. Some studies include steps like pasteurization, pH adjustment, or addition of ascorbic acid or citric acid to enhance stability.
2. Commercial Gel Use – Gel is directly incorporated as provided, often already stabilized, decolorized, and standardized.

Key considerations across studies include:

- Maintaining low oxidative exposure
- Preventing microbial contamination
- Ensuring proper viscosity for emulsification

A typical moisturizing lotion is an oil-in-water (O/W) emulsion. Literature frequently describes heating the aqueous phase (containing Aloe vera gel, humectants, water, and water-soluble actives) separately from the oil phase (containing Shea butter, carrier oils, emulsifiers, and oil-soluble vitamins). Both phases are usually heated to approximately 65–70°C to ensure uniform melting and sanitization. The emulsification process involves slowly combining the oil phase with the aqueous phase under continuous stirring to form a homogeneous emulsion. High-shear mixing or homogenization is sometimes employed to achieve a stable droplet size distribution.

B. Melting and Preparation of Shea Butter

Review findings show that Shea butter must be gently heated to its melting point (approx. 38–45°C) to preserve its bioactive compounds. It is often melted together with oils, emulsifiers, and lipid-soluble vitamins. Overheating (>70°C) is avoided to protect its unsaponifiable content.

The literature reveals several key parameters commonly employed to evaluate formulated lotions, including:

- pH compatibility with skin (typically 4.5–6.5)
- Viscosity and rheological behavior
- Spreadability and sensory perception
- Stability testing (centrifugation, freeze–thaw cycles, storage stability)
- Microbial load assessment due to the natural nature of ingredients
- Moisturizing efficacy, TEWL reduction, and hydration index

C. Formulation as an Oil-in-Water Emulsion Most reviewed methodologies follow these steps:

1. Aqueous Phase Preparation: Consists of Aloe vera gel, water, humectants, and water-soluble additives. Heated to 65–75°C with gentle mixing.
2. Oil Phase Preparation: Includes melted Shea butter, emulsifiers, and lipid-soluble components. Heated to a matching temperature to ensure uniform blending.
3. Emulsion Formation: The oil phase is added slowly to the aqueous phase or vice versa while applying high-shear mixing, resulting in a well-dispersed O/W emulsion.
4. Cooling Phase: The mixture is allowed to cool under continuous stirring. Heat-sensitive ingredients such as fragrances or preservatives are added below 40°C.
5. Stabilization and Packaging: Formulations are subjected to stability tests, including freeze–thaw cycles, centrifugation, and room-temperature storage studies.

Category	Common Ingredients	Role in Formulation
Aqueous Phase	Aloe vera gel, distilled water, glycerin, hydrosols	Hydration, humectancy, skin penetration
Oil Phase	Shea butter, carrier oils (coconut, almond, jojoba), emulsifiers (cetostearyl alcohol, glyceryl stearate)	Emolliency, occlusion, emulsification, stabilization
Additives	Xanthan gum, carbomer, cetyl alcohol	Thickening, viscosity enhancement
Preservatives	Phenoxyethanol, potassium sorbate, sodium benzoate	Microbial stability
Antioxidants	Vitamin E (tocopherol), rosemary extract	Prevent oxidation of oils
Fragrance/Essential Oils	Lavender, tea tree, chamomile	Sensory appeal, mild antimicrobial effects

Table 1: Typical Components Used in Aloe–Shea Butter Moisturizing Lotions

D. Evaluation Parameters for the Formulation: Across reviewed works, the following tests are most frequently reported:

- pH Analysis
- Viscosity/rheology measurement
- Spreadability tests
- Organoleptic assessment (texture, color, odor, skin feel)
- Microbial load evaluation
- Stability studies under variable temperature conditions
- Moisturizing efficacy using TEWL measurements or corneometry

These parameters collectively determine the effectiveness, safety, and acceptability of the final lotion.

IV. DISCUSSION

The combination of Aloe vera gel and Shea butter in moisturizing lotions, as evidenced across multiple research sources, demonstrates notable synergistic benefits for skin hydration, barrier restoration, and biological protection. Aloe vera, rich in polysaccharides and bioactive compounds, provides humectant properties that attract and bind water within the stratum corneum. Its anti-inflammatory, antibacterial, and antioxidant effects support skin healing and protect against irritation. Conversely, Shea butter functions primarily as an emollient and occlusive agent, creating a lipid film that prevents transepidermal water loss (TEWL) while supplying essential fatty acids that fortify the skin's natural barrier.

When formulated together, Aloe vera offers immediate hydration, while Shea butter provides long-

lasting moisture retention making the combination particularly effective for dry, sensitive, and damaged skin types. Several studies show that lotions containing both ingredients exhibit improved texture, consistency, and spreadability, making them pleasant for daily use. Additionally, the unsaponifiable matter in Shea butter contributes to antioxidant stability, potentially enhancing the shelf life and protective properties of formulations. From a formulation science perspective, the oil-water balance, emulsifier choice, and phase integration are critical for achieving a stable lotion. Aloe vera's high water content can challenge emulsion stability, but this can be managed through proper emulsification techniques, stabilizers, and optimized Shea butter concentrations. Overall, existing research strongly supports the effectiveness of Aloe vera and Shea butter as key ingredients in natural moisturizer formulations, aligning with consumer preferences for plant-based, non-toxic, and eco-friendly skincare products.

Synergistic Hydration Mechanisms

A major point emphasized across studies is the synergistic moisturizing action achieved when combining humectants (Aloe vera) with emollients and occlusives (Shea butter). Aloe vera gel, rich in polysaccharides, primarily acemannan, acts as a potent humectant by attracting water molecules and binding moisture within the stratum corneum. This mechanism results in immediate hydration and improved softness. On the other hand, Shea butter contains oleic acid, stearic acid, and unsaponifiable matter such as triterpenes, sterols, and tocopherols, which act as occlusive agents that create a protective barrier on the skin surface. This barrier decreases transepidermal

water loss (TEWL), allowing the skin to retain the moisture supplied by Aloe vera for longer durations.

When used together:

- Aloe vera provides instant hydration
- Shea butter ensures prolonged moisture retention
- The final formulation demonstrates enhanced skin suppleness, texture, and barrier repair

This synergistic effect explains why their combination is increasingly preferred in both commercial and homemade natural skincare formulations.

Enhanced Dermatological Benefits

Several studies highlight the anti-inflammatory, antibacterial, antioxidant, and wound-healing activities of Aloe vera and Shea butter. These biological benefits make their combination suitable not only for routine moisturization but also for managing dry skin conditions, eczema, sunburn, minor wounds, and environmentally damaged skin.

- Aloe vera contains glucomannans, magnesium lactate, vitamins C and E, and anthraquinone derivatives, which contribute to its soothing, antioxidant, and cell regenerative properties.
- Shea butter's triterpenes (lupeol, alpha- and beta-amyrin) demonstrate anti-inflammatory actions that help reduce redness, swelling, and irritation.
- The combined antioxidant profile of both ingredients helps neutralize free radicals, slowing down oxidative stress and premature skin aging.

Sensory Characteristics and Consumer Acceptability

Consumer preference strongly influences moisturizer success. Review findings consistently indicate that formulations containing Aloe vera and Shea butter offer desirable sensory properties, including:

- A non-greasy, smooth skin feel
- Enhanced spreadability due to Aloe vera
- A rich, creamy texture imparted by Shea butter
- Noticeable softness and hydration even after several hours

Importantly, Shea butter must be properly emulsified to prevent the formation of grainy textures that sometimes occur due to crystal fractionation during cooling. Many studies note that blending Aloe vera and Shea butter at appropriate ratios improves the product aesthetics significantly.

Comparative Advantages Over Synthetic Moisturizers: A key theme identified in reviewed literature is the consumer shift toward natural, biodegradable, and sustainable cosmetic ingredients. In this context, lotions formulated with Aloe vera and Shea butter have multiple advantages over synthetic moisturizers:

- They avoid petroleum-based occlusives such as mineral oil and petrolatum.
- They provide additional nutritional and therapeutic benefits due to natural bioactives.
- They align with global trends favoring clean beauty, organic skincare, and eco-conscious products.

This natural appeal is also supported by the cultural history of both ingredients Aloe vera in traditional healing systems and Shea butter in African skincare practices.

Parameter	Aloe Vera Gel	Shea Butter
Source	Gel obtained from the inner leaf parenchyma of <i>Aloe barbadensis</i> Miller	Fat extracted from kernels of <i>Vitellaria paradoxa</i> tree
Major Bioactive Components	Polysaccharides (acemannan, glucomannan), vitamins (A, C, E), amino acids, phenolic compounds, enzymes (bradykinase)	Fatty acids (oleic, stearic, linoleic, palmitic), unsaponifiable matter (triterpenes, sterols), tocopherols, catechins
Primary Cosmetic Function	Humectant: attracts and retains moisture in the stratum corneum	Emollient & Occlusive: forms lipid layer to prevent TEWL and smooth skin texture
Mechanism of Moisturizing Action	Increases water binding due to polysaccharide matrix; enhances hydration levels	Reduces TEWL by forming lipid barrier; replenishes skin lipids; long-lasting moisturization
Additional Dermatological Benefits	Anti-inflammatory, wound healing, antioxidant, soothing, antimicrobial	Anti-inflammatory, antioxidant, UV-protective, skin barrier repair

Table 2: Comparative Overview of Aloe Vera Gel and Shea Butter in Moisturizing Lotion Formulations

V. FUTURE PROSPECTS

The growing demand for natural, sustainable, and functional skincare highlights the potential for further innovation in formulations based on Aloe vera and Shea butter. Future research may explore nano-emulsions, liposomal delivery systems, and biopolymer-based stabilizers to enhance nutrient penetration and formulation stability. The use of green extraction methods and eco-certified preservatives can significantly increase the value of such moisturizers in the clean beauty market. Additionally, the integration of bio-fermented extracts, prebiotics, and microbiome-friendly ingredients with Aloe and Shea could lead to multifunctional moisturizing systems that support skin immunity, barrier resilience, and long-term hydration. There is also potential for developing customizable formulations targeting age-related dryness, hypersensitivity, and climate-specific moisturizing needs. Expanding dermatological research into the long-term effects of continuous use of Aloe- and Shea-based lotions will provide deeper insights into their efficacy and safety.

VI. CONCLUSION

In summary, Aloe vera gel and Shea butter represent two of the most beneficial natural ingredients for moisturizing lotion formulations due to their complementary humectant, emollient, occlusive, and therapeutic properties. Aloe vera provides immediate hydration and anti-inflammatory effects, while Shea butter replenishes the lipid barrier and locks in moisture for extended periods. Their combination leads to enhanced moisturizing efficacy, improved skin texture, and increased protection against environmental stressors. The formulation methodologies discussed across existing literature underscore the importance of proper emulsification, ingredient compatibility, and stability assessment for effective product development. As consumer interest continues to shift toward natural and sustainable skincare, formulations incorporating Aloe vera and Shea butter will remain central to future cosmetic innovations. Together, these ingredients offer a powerful, scientifically supported foundation for creating high-performance moisturizing lotions that promote healthy, hydrated, and resilient skin.

The reviewed literature strongly supports the effectiveness and advantages of moisturizing lotions formulated using Aloe vera gel and Shea butter. Their combined actions humectant, emollient, occlusive, anti-inflammatory, and antioxidant work holistically to enhance skin hydration, repair, and protection. Despite formulation challenges, especially regarding stability and preservation, the optimal use of emulsification techniques and compatible excipients can produce highly stable, consumer-friendly natural lotions.

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