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Formulation and Evaluation of Moisturizing Cream

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Abstract: *The present study focuses on the formulation and evaluation of a moisturizing cream using natural and synthetic ingredients to provide optimal skin hydration and protection. The cream was formulated by incorporating emollient, humectants, emulsifiers, and preservatives in appropriate ratios to ensure stability, efficacy and safety. Key ingredient included aloe vera gel, glycerin, coconut oil, rose water, vitamin E. The prepared formulation underwent a series of evaluations, including pH determination, viscosity measurement, spreadability, skin irritation tests, and stability studies under various storage conditions. The results demonstrated that the cream possessed desirable physical characteristics, maintained stability over time, and showed no signs of skin irritation. The moisturizing efficacy was confirmed through user feedback and hydration measurements. This study concludes that the formulated moisturizing cream is both effective and safe for routine skin care applications.*

The increasing demand for effective skincare products has led to extensive research into the formulation of moisturizing creams that hydrate the skin, enhance barrier function, and offer long-lasting protection against environmental stressors. This study aims to formulate and evaluate a stable, non-greasy, and skin-friendly moisturizing cream using both natural and synthetic components. The cream was developed using an oil-in-water(O/W) emulsion system containing key ingredients such as glycerin (humectant), stearic acid and cetyl alcohol (emulsifiers and emollients), mineral oil or natural oils (occlusive agents), aloe vera extract, and vitamin E (antioxidant and skin rejuvenator). A preservative system was also incorporated to ensure microbial stability.

The prepared cream was subjected to comprehensive physiochemical evaluation, including:

pH determination (to ensure skin compatibility)

Viscosity and rheological behaviour (for application consistency)

Spreadability test (for ease of use)

Skin irritation test (on a small group of volunteers via patch test)

Stability testing under varying temperature and humidity conditions

Moisturizing efficacy evaluation using transepidermal water loss (TEWL) and hydration measurements on human skin

Multiple batches were prepared to optimize the formulation, and the final product was found to be smooth, easily spreadable, and quickly absorbed without leaving a greasy residue. It maintained its integrity over a three-month stability study and showed no microbial growth or phase separation. User feedback confirmed improved skin softness and hydration after consistent use. The study concludes that the developed moisturizing cream is safe, effective and stable, making it suitable for commercial cosmetic applications. Further enhancement with specific active ingredients could target additional skin concerns such as aging, pigmentation, or acne.

Keywords: Moisturizing cream, Formulation, Evaluation, Emulsion, Glycerin, Aloe vera, Vitamin E, Skin hydration, Stability Testing, Spreadability, Viscosity, pH Skin irritation test, Natural ingredients, Cosmetic product, Humectant, Emollient, Oil-in-water(O/W) emulsion

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