INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: https://www.ijpsjournal.com

OPEN ACCESS

Research Article

Formulation And Evaluation of An Herbal Cream of Psoriasis

Komal Chavan*, Rupali Vijay Kachkure, Madhavi Ashok Kakphale, Shalini Kisan Kawade, Maya Sahebrao Jadhav, Akanksha Bhaskar Mahajan

Gajanan Maharaj College of Pharmacy, Chh, Sambhajinagar.

ARTICLE INFO

Published: 12 June 2025
Keywords:
Azadirachta Indica; Psoriasis; LC-MS; Phytochemicals; Antioxidant Activity
DOI:
10.5281/zenodo.15648411

ABSTRACT

Psoriasis is a chronic, genetically influenced, remitting and relapsing scaly and inflammatory skin disorder that affects 1 to 3 percent of the world's population. The diagnosis is made on clinical grounds, although histologic examination of a skin-biopsy specimen may be helpful. Psoriasis is a disabling, though rarely life-threatening, disease with a social and economic impact that is underestimated by physicians and other health care providers. Recently, progress has been made in understanding the pathogenesis of psoriasis, and therapeutic advances are improving the care of even severely affected patients. There are several types of psoriasis, including pustular, guttate, and arthritic variants.

INTRODUCTION

Psoriasis is a lifelong immune-mediated inflammatory skin disease, associated with morbidities such as psoriatic arthropathy, psychological, cardiovascular and hepatic diseases. In 2014, the World Health Organization recognised psoriasis as a serious non-communicable disease and highlighted the distress related to misdiagnosis, inadequate treatment and stigmatisation of this disease.[1] The Global Burden of Disease Study estimated that psoriasis accounted for 5.6 million all-age disability-adjusted life-years (DALYs) in 2016; at least three-fold that of inflammatory bowel disease.

Psoriasis:

Psoriasis is a chronic skin condition where skin cells grow and shed too quickly, leading to thick, red, scaly patches, often on the elbows, knees, scalp, and lower back. It's an immune system issue where the body mistakenly attacks healthy skin cells. While there's no cure, various treatments can help manage symptoms and improve quality of life.

***Corresponding Author:** Komal Chavan
Address: *Gajanan Maharaj College of Pharmacy, Chh, Sambhajinagar.*
Email ✉: kbchavan.gmcp@gmail.com
Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Chemical Constituents.

Neem contains a variety of chemical constituents, including limonoids like azadirachtin, as well as alkaloids, flavonoids, and terpenoids. These compounds contribute to neem's diverse medicinal properties, such as its anti-inflammatory, antibacterial, and antifungal activities.

Chemical constituents present in different parts of Neem:

Plant parts	Phytocontituents
Bark	Alkaloids, flavonoids, tannins,terpenoids, and steroids.
Flowers	Flavonoids like kaempferol and melicitrin, and nimbosterol
Fruits	Nimbin, nimbidin, azadirachtin, limonoids, tannins and phenolic compounds
Leaves	Alkaloids,steroids, tannins, flavonoids
Stem	Alkaloids, flavonoids, tannins, saponins
Seeds	Azadirachtin, nimbin, and various limonoids

Causes:

1. Infections
2. Skin Injuries
3. Stress
4. Medications
5. Weather
6. Lifestyle Factors

Symptoms:

1. Plaques
2. Itchiness
3. Dryness and Cracking
4. Nail Abnormalities
5. Joint Pain and Stiffness
6. Scalp Involvement
7. Other Symptoms

Procedure:

Step 1: Neem extract

The powder plant neem material was extraction by soaking it in 95% ethanol at room temperature for 72 hrs.

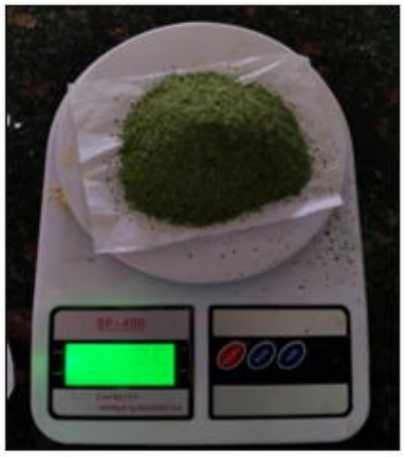

Figure 1: Neem Powder

Figure 2: Neem Extraction

Step 2: Oil phase

- Cocoa butter was taken and weigh 6gm
- Stearic acid was taken and weigh 6gm

- Cetyl alcohol was taken and weigh 5gm
- Vit E oil was taken 4ml
- Tea tree oil was taken 3ml
- Stearic acid, cocoa butter, coconut oil, cetyl alcohol, olive oil, vit E oil are mixed together and oil phase is prepared.

Step 3: Aqueous phase

Neem extract, Methyl paraben are mixed together and heated on 75^0C.

Figure 3: Aqueous Phase

Step 4: After heating, the aqueous phase (Part B) and heated to 75^0C. After heating, the aqueous phase was added in portions to the oil phase with continuous stirring and perfume was added.

Formulation Table:

Ingredients	F1	F2	F3
Neem	6ml	7ml	8ml
Cocoa butter	4gm	5gm	6gm
Stearic acid	4gm	5gm	6gm
Cetyl alcohol	3gm	4gm	5gm
Coconut oil	3ml	4ml	5ml
Vit E oil	2ml	3ml	4ml
Tea tree oil	1ml	1gm	1gm
Turmeric	1gm	3ml	3ml
Methyl paraben	1gm	2gm	2gm

Evaluation Test for Cream

1) Stability
2) pH of the cream
3) Viscosity
4) Spreadability

PH of the cream: the ph meter was calibrated using standard buffer solution. About 1 g of the cream was weighted and dissolved in 50ml of distilled water. The ph of the suspension was determined at 270c.

Fig: 4 (PH Test)

Stability: the prepared formulation in the final container was kept in the room temperature at 260+2 and refrigerator at 40C+2 for 2 month at the end of studies samples were analysed for the physical properties and viscosity.

Viscosity: viscosity of the formulation was determined by Brookfield viscometer at 100rpm, using spindle no 7.

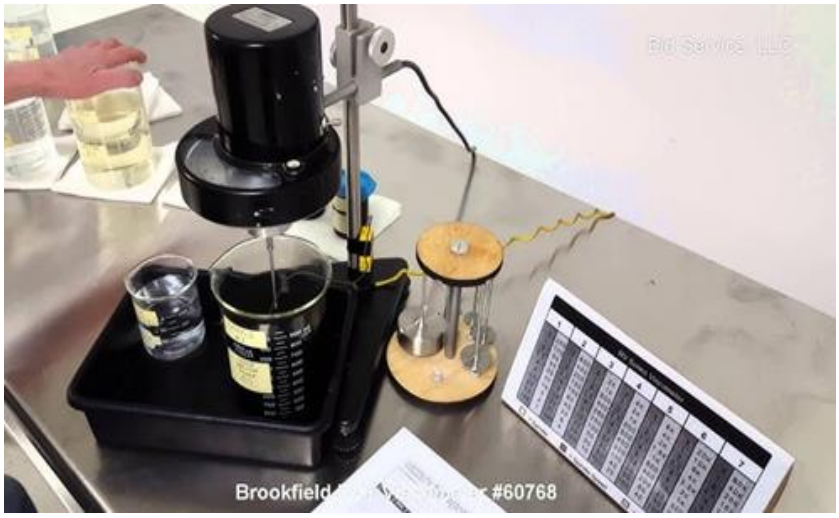

Fig: 5 (Brook Field Viscometer)

Spreadability:

Formula:

Spreadability = M×L/T

M = weight tide to the upper side

L = length of glass slide

T = time taken in seconds.

RESULT AND DISCUSSION

Sr.no	Result	F1	F2	F3
1	Colour	Cream yellow	Cream yellow	Cream yellow
2	Odour	Pleasant	Pleasant	Pleasant
3	State	Semi- solid	Semi- solid	Semi- solid
4	Type of emulsion	w/o Emulsion	w/o Emulsion	w/o Emulsion
5	PH	6.3	6.2	6.4
6	Washability	Easily washable	Easily washable	Easily washable
7	Irritancy	Nill	Nill	Nill
8	Phase separation	No	No	No
9	Spreadability	13gm/sec	13gm/sec	15gm/sec
10	Stability	stable	stable	stable

CONCLUSION:

Psoriasis is a chronic, immune-mediated skin disorder characterized by hyperproliferation of keratinocytes and systemic inflammation. It presents with well-defined, scaly, erythematous plaques and can significantly affect a patient's quality of life. Although its exact cause remains multifactorial—combining genetic, immunological, and environmental factors—advances in understanding its pathophysiology have led to more targeted and effective treatments. While there is currently no cure, various therapies, including topical agents, phototherapy, systemic medications, and biologics, can help manage symptoms and reduce flare-ups. Early diagnosis, patient education, and a comprehensive, individualized treatment approach are essential for optimal disease control and improved patient outcomes.

REFERENCES

1. Aditya AK, Nicol K (2004) The use of sulfur in dermatology. J Drugs Dermatol 4:427–31
2. Al Shobaili HA, Shahzad M, Al-Marshood A, Khalil AS, Settin A, Barrimah I (2010) Genetic Bckground of Psoriasis. Int J Health Sci 4:23–29
3. Armstrong AW, Read C (2020) Pathophysiology, Clinical and presentation, treatment of psoriasis: a review. JAMA 323:19–26
4. Armstrong AW, Schupp C, Wu J, Bebo B (2012) Impaired quality of life and work productivity among patients with psoriasis: fndings from the 2003–2011 National Psoriasis Foundation survey data. PLoS ONE 7(12):5293
5. Cuellar L, Sehtman A, Donatti L (2008) Acido Salicílico. Act Terap Dermatol 31:108
6. Feingold KR (2009) The outer frontier: the importance of lipid metabolism in the skin. J Lipid Res 50(Suppl):S417-422
7. Gibbs S (1996) Enfermedades de la piel y condiciones socioeconómicas en el África rural: Tanzania. En T J Dermatol 35:633–639
8. Gupta AK, Nicol K (2004) The use of sulfur in dermatology review. J Dermatol Drugs 3(4):427–31
9. Hyung-Sik Seo J (2012) An experimental study of the anti-oxidant and the anti-infammatory efects of alum and burnt alum. J Pharmacopunct 2:11–14
10. Jacobi A, Mayer A, Augustin M (2015) Keratolytics and emollients and their role in psoriasis therapy: a systematic review. Dermatol Ther (Heidelb) 5(1):1–18
11. Parisi, R., Iskandar, I. Y. K., et al. (2020). Global epidemiology of psoriasis: a systematic review of incidence and prevalence. Journal of Investigative Dermatology, 140(4), 678–685. https://doi.org/10.1016/j.jid.2019.10.008
12. Nestle, F. O., Kaplan, D. H., & Barker, J. (2009). Psoriasis. New England Journal of Medicine, 361(5), 496–509. https://doi.org/10.1056/NEJMra0804595
13. Griffiths, C. E. M., & Barker, J. N. W. N. (2007). Pathogenesis and clinical features of psoriasis. The Lancet, 370(9583), 263–271. https://doi.org/10.1016/S0140-6736(07)61128-3
14. National Psoriasis Foundation. (2024). Understanding Psoriasis. https://www.psoriasis.org/about-psoriasis/.

HOW TO CITE: Komal Chavan*, Rupali Vijay Kachkure, Madhavi Ashok Kakphale, Shalini Kisan Kawade, Maya Sahebrao Jadhav, Akanksha Bhaskar Mahajan, Formulation and Evaluation of An Herbal Cream of Psoriasis, Int. J. of Pharm. Sci., 2025, Vol 3, Issue 6, 2419-2423. https://doi.org/10.5281/zenodo.15648411