



## Herbal Treatment of Psoriasis: A Review

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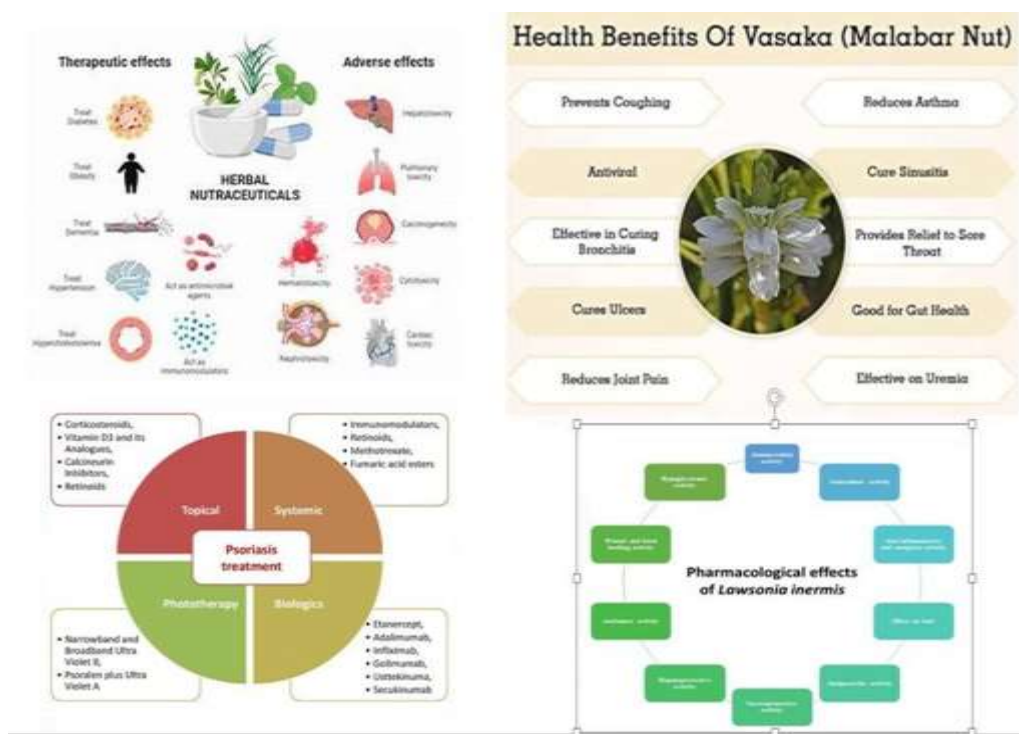
### ABSTRACT:

Psoriasis is a long-lasting ailment that falls under the category of inflammatory skin disease and troubles a large population globally. Natural Products have also aroused interest for use in the treatment of psoriasis as they may be able to help normalize the immune system and control more. Plants used in traditional systems of medicine offer a good source of remedy for the Scourge of psoriasis. In this review an account of Indian herbs such as Vasaka, Garlic, Tejpatra, Guggulu, Dhamasa e.t.c in the management of Psoriasis together with their pharmacological active ingredients and the biological activity performed has been provided. Further the article elaborates on the basic understanding of psoriasis as a molecular pharmacology and the disadvantages of existing allopathic Treatment strategies. Most importantly, the review integrates advances made in basic research on the botanical constituents from Indian Medicinal plants with respect to treatment of eczema, especially available active substances demonstrating anti-inflammatory, antioxidant, or regulatory- impact immunity effects.

This review paves the way for the need for subsequent studies concerning the efficiency of Traditional therapeutic agents in the treatment of psoriasis.

**KEYWORDS :** Psoriasis , Inflammatory skin disease , Natural product , Immune system , Immunity regulation , Allopathic treatment strategies, Traditional therapeutic agents

### GRAPHICAL ABSTRACT



## Introduction :

Psoriasis is a chronic immune-mediated inflammatory skin disease with multiple phenotypes, including plaque, flexural, guttate, pustular, and erythrodermic types. Psoriasis has a significant genetic component, with an estimated heritability of 60-

90%. Psoriasis can occur on the scalp, face, nails, genitalia, palms, soles, and other highly affected areas that are difficult to treat. Recognition and management of comorbidities (e.g., psoriatic arthritis, psychiatric, cardiovascular, and liver disease) are an important part of holistic care for patients with psoriasis. Treatment of psoriasis includes topical therapies (vitamin D analogs and corticosteroids), phototherapy (narrowband ultraviolet B irradiation (NB-UVB) and psoralen and ultraviolet A irradiation (PUVA)), conventional systemic agents (methotrexate, cyclosporine, acitretin), targeted biologics (tumor necrosis factor (TNF), interleukin

(IL)-17 and IL-23 inhibitors), and oral small molecule inhibitors (dimethyl fumarate and apremilast).

Psoriasis is a lifelong immune-mediated inflammatory skin disease associated with psoriatic arthritis, psychiatric, cardiovascular, and hepatic morbidity. In 2014, the World Health Organization (WHO) identified psoriasis as a serious noncommunicable disease, highlighting the distress associated with misdiagnosis, inadequate treatment, and stigma of this disease. (Global Burden of Disease Study) estimates that psoriasis accounted for 5.6 million disability-adjusted life years (DALYs) of all ages in 2016, which is at least three times more than inflammatory bowel disease.

## Epidemiology:

Psoriasis affects both men and women, with earlier onset in women and those with a family history of the disease. The age of onset shows a bimodal distribution, with peaks at ages 30-39 and 60-69 years in men and 10 years earlier in women. The number of psoriasis patients worldwide is estimated at 60 million, with prevalence rates by country ranging from 0.05% of the general population in Taiwan to 1.88% in Australia.

## Etiology:

The etiology of psoriasis is multifactorial, with genetics being the predominant cause, especially in early-onset (< 40 years of age) plaque psoriasis. This has been demonstrated by twin studies, family studies, and large population-level studies, with an estimated heritability of 60-90%. Many candidate causative genes are involved in antigen presentation (HLA-C and ERAP1), NF- $\kappa$ B signaling (TNIP1), type 1 interferon pathway (RNF113 and IFIH1), the interleukin (IL)-23/Th17 axis (IL23R, IL12B, and TYK2) and skin barrier function (LCE3).

Thus, the complex interactions between T cells, dendritic cells, and keratinocytes underlie the pathophysiology of psoriasis. Environmental factors are known to exacerbate psoriasis, including obesity, stress, blockers, smoking, and lithium. The number of studies on psoriasis is relatively small.

## TYPES:

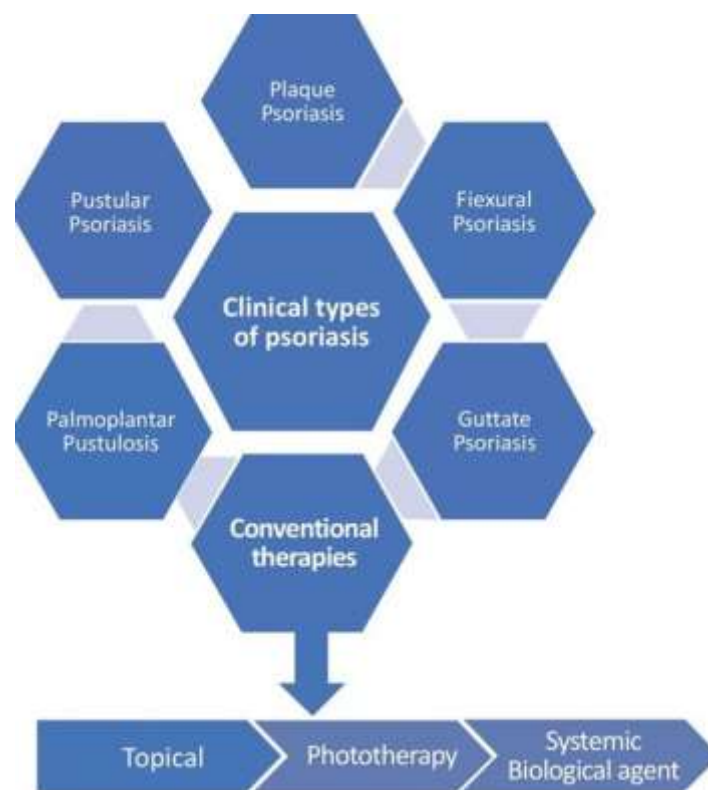


Fig 1: Types Psoriasis

## TYPES OF PSORIASIS

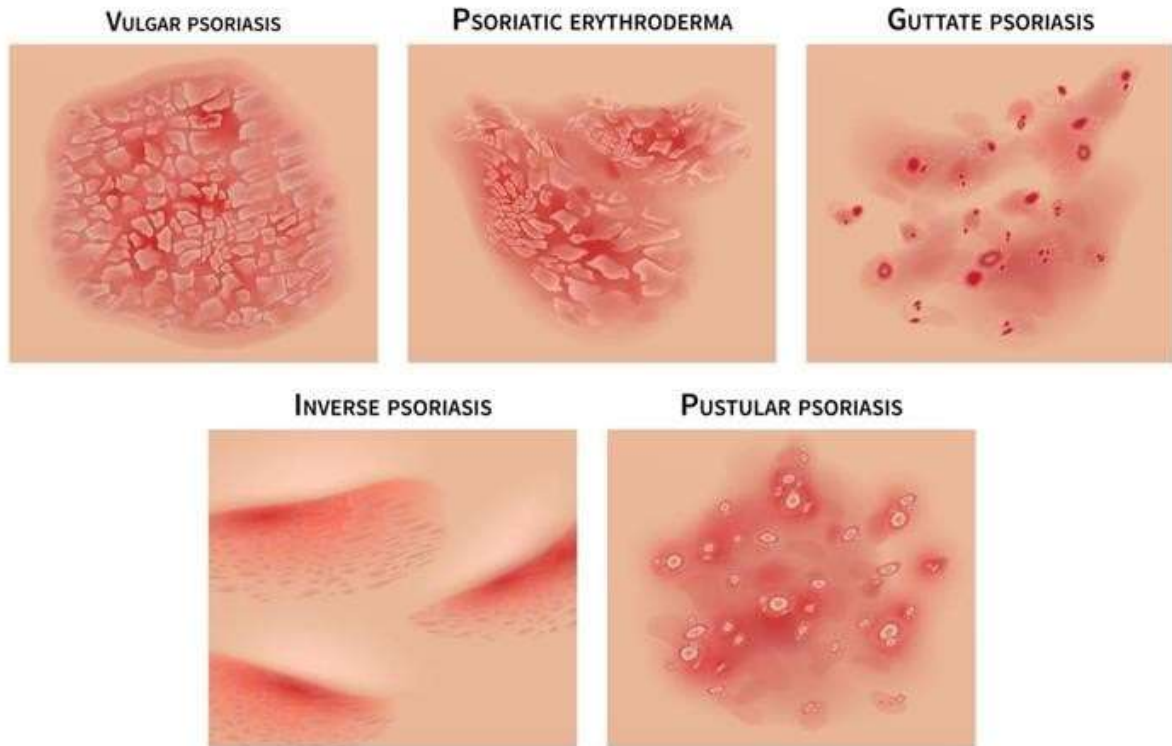


Fig 2: Types Psoriasis

## MECHANISM OF PSORIASIS

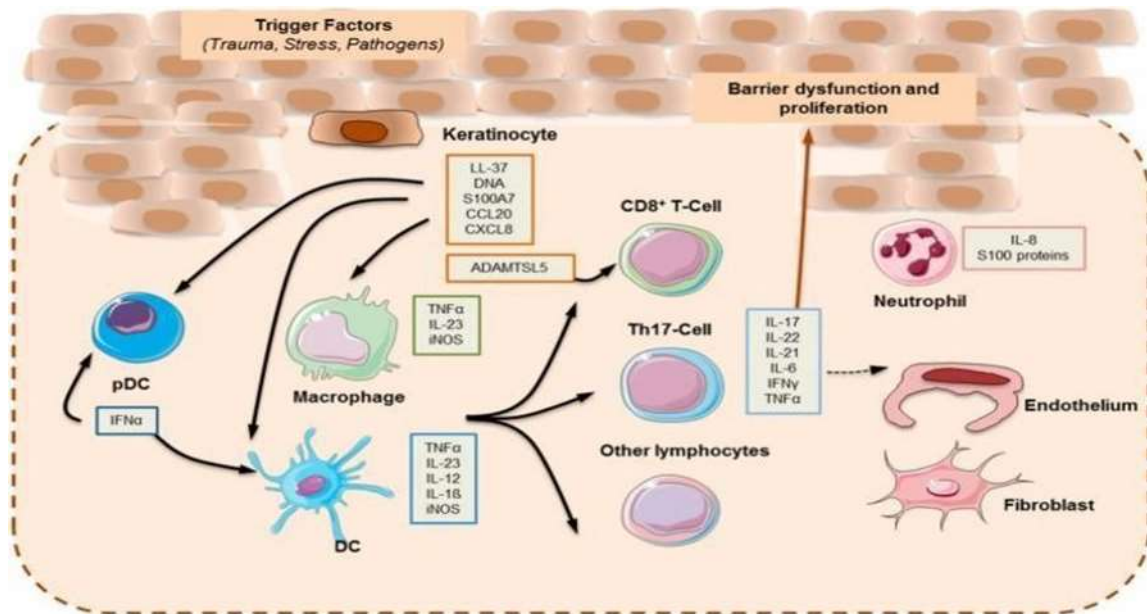


Fig 3 : mechanism Of Psoriasis

The immune dysregulation in psoriasis involves the activation of T cells, particularly Th17 and Th1 cells, and the release of pro-inflammatory cytokines such as interleukin-

17 (IL-17), tumor necrosis factor-alpha (TNF-?), and interferon-gamma (IFN-?). These cytokines stimulate keratinocytes to produce chemokines and adhesion molecules, which promote the recruitment of inflammatory cells, including neutrophils and dendritic cells, to the skin. The activation of keratinocytes and the recruitment of inflammatory cells result in the formation of psoriatic plaques, which are characterized by thickened, scaly, and erythematous skin.

In addition to immune dysregulation, there are also defects in the skin barrier function in psoriasis, which can exacerbate the disease by allowing for increased antigen penetration and inflammation. Furthermore, the dysregulation of the epidermal differentiation and proliferation pathways in psoriasis can lead to abnormal keratinocyte differentiation and hyperkeratosis, which contribute to the formation of psoriatic plaques.

## TREATMENT FOR PSORIASIS :

Allopathic treatment of psoriasis involves the use of Topical and systemic medications to reduce inflammation, control symptoms, and improve quality of life. Topical Treatments include corticosteroids, vitamin D analogues, and retinoids, while systemic treatments include Immunosuppressants and biologic agents. Corticosteroids are commonly used as a first-line Treatment for mild to moderate psoriasis due to their Anti-inflammatory effects. However, long-term use can lead to skin atrophy, striae, and other side effects. Vitamin D analogues such as calcipotriene and calcitriol are also effective in treating psoriasis by inhibiting Keratinocyte proliferation and reducing inflammation. Retinoids such as tazarotene can also be used to treat Psoriasis by promoting cell differentiation and reducing Inflammation. Systemic treatments for psoriasis include Immunosuppressants such as methotrexate, cyclosporine, and azathioprine. These medications work by suppressing the immune system and reducing inflammation.

Despite the effectiveness of these treatments, they Have limitations. Topical treatments are often limited by their application site, and systemic treatments can cause Significant side effects such as immunosuppression, Infections, and malignancies. Moreover, the long-term Safety of biologic agents is still under investigation, and their high cost can limit access to treatment

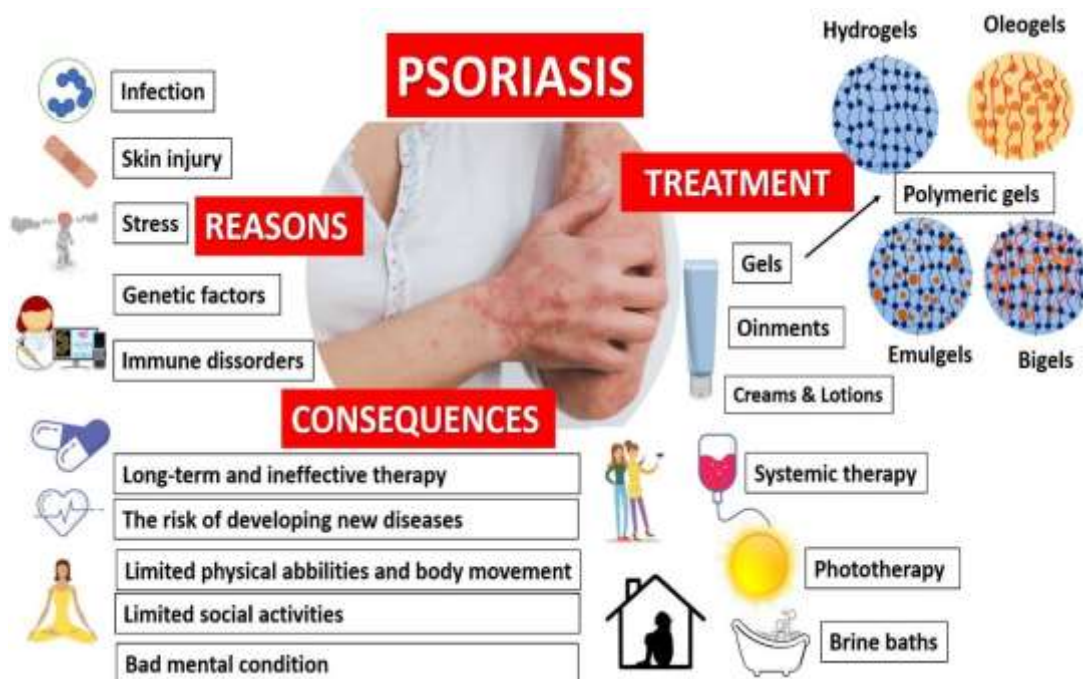


Fig.4: Treatment of Psoriasis

- **TRADITIONAL METHOD :**

Hippocrates (460-377 BC) was the first physician to use coal tar in the treatment of psoriasis to increase sensitivity to sunlight, but he also supported the use of topical arsenic for the treatment of psoriasis

- Salt bath. This might lift some of your scales and help you itch less. Add Dead Sea or Epsom salts to warm water. ...
- Alovera. A cream with 0.5% aloe might lessen your scales and ease redness for a short time. ...
- Healthy diet. There's no meal plan specifically for psoriasis.

- **CONVENTIONAL METHOD :**

Typical treatments for psoriasis involve the use of topical and systemic medications. To keep it brief, the presentation will focus solely on systemic therapy. Currently in Italy, there are three drugs available: methotrexate, acitretin, and cyclosporin A. They have similar effectiveness, with about 60% of cases achieving PASI 75 within 12 weeks. The indications, contraindications, interactions, adverse effects, and precautions of these drugs will be examined, excluding psoriasis as an indication for methotrexate in Italy. More than 10% of cases experience side effects from Methotrexate, which mainly include nausea, vomiting, and an elevation in liver enzyme levels. Acitretin has many different side effects, with the most serious ones including elevated liver enzymes and blood lipids, kidney function impairment, and potential harm to developing fetuses. The main side effects of Cyclosporin are high

blood pressure and kidney dysfunction. The Author's final assessment is that cyclosporin has the highest efficacy/side effect ratio among drugs, but it should only be used in specific cases

● **NOVEL METHOD :**

- Bimekizumab (Bimzelx)

An injectable biologic that blocks proteins that cause inflammation. It was approved by the FDA in October 2023 and is used to treat moderate to severe plaque psoriasis. In clinical trials, bimekizumab showed promising results, with more than half of patients experiencing complete skin clearance after 16 weeks of treatment.

- Tapinarof (Vtama)

A steroid-free topical cream that can be used to treat mild, moderate, and severe plaque psoriasis. It can be applied once a day and is safe for long-term use.

- Sotyktu

An oral treatment option for adults with plaque psoriasis that was approved by the FDA in 2022.

- Ebdarokimab (AK 101)

A monoclonal antibody medication that treats plaque psoriasis by targeting two inflammatory proteins. It's given as a once-monthly, under-the-skin injection.

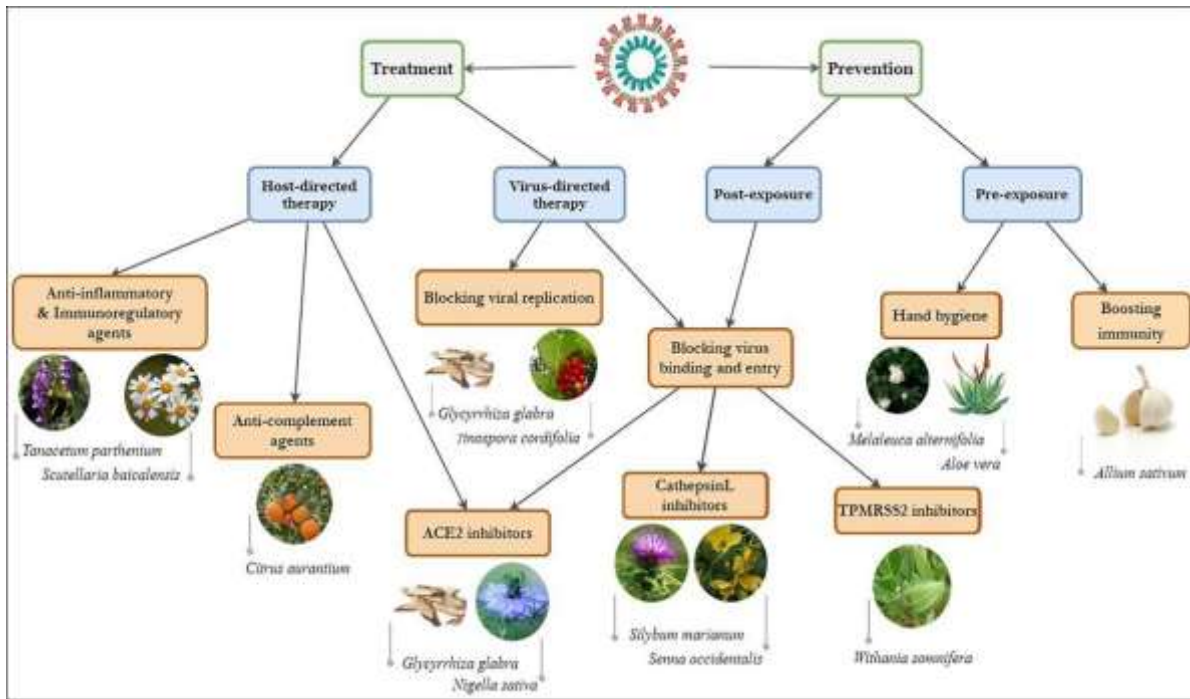


Fig 5: herbal drugs in treatment of Psoriasis

Plant's Scientific Name	Family	Common Name	Traditional Uses
<i>Adhatoda vasica</i>	Acanthaceae	Vasaka	Used topically to treat psoriasis and other skin disorders
<i>Allium sativum</i>	Amaryllidaceae	Garlic	Used topically to reduce inflammation and redness in psoriasis
<i>Boerhavia diffusa</i>	Nyctaginaceae	Punarnava	Used topically to treat psoriasis and other skin conditions
<i>Cassia tora</i>	Fabaceae	Chakramarda	Used topically to relieve itching and inflammation in psoriasis
<i>Cinnamomum</i>	Lauraceae	Tejpatra	Used topically to reduce inflammation and itching in psoriasis

<i>tamala</i>			
<i>Commiphora mukul</i>	Burseraceae	Guggulu	Used topically to reduce inflammation and redness in psoriasis
<i>Eclipta prostrata</i>	Asteraceae	Bhringraj	Used topically to relieve itching and inflammation in psoriasis
<i>Fagonia arabica</i>	Zygophyllaceae	Dhamasa	Used topically to reduce inflammation and redness in psoriasis
<i>Hemidesmus indicus</i>	Apocynaceae	Anantmool	Used topically to relieve itching and inflammation in psoriasis
<i>Lawsonia inermis</i>	Lythraceae	Mehndi	Used topically to treat psoriasis and other skin conditions
<i>Melia azedarach</i>	Meliaceae	Bakain	Used topically to reduce inflammation and itching in psoriasis
<i>Moringa oleifera</i>	Moringaceae	Sahijan	Used topically to relieve itching and redness in psoriasis
<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Used topically to treat psoriasis and other skin disorders
<i>Picrorhiza kurroa</i>	Plantaginaceae	Kutki	Used topically to relieve itching and inflammation in psoriasis
<i>Plumbago indica</i>	Plumbaginaceae	Chitrak	Used topically to reduce inflammation and itching in psoriasis
<i>Psoralea corylifolia</i>	Fabaceae	Bakuchi	Used topically

Table 1: list of different herbal drug along with traditional use

## FUTURE SCOPE :

- Herbal medicine is expected to have a bright future in healthcare, with the potential to improve health and well-being in the coming years. Here are some factors that may contribute to this:
- New technologies

New technologies like nanotechnology, smart screening methods, and metabolic engineering can help discover new natural products for drugs.

- Scientific backing

Herbal medicine has a long history and is increasingly supported by scientific research.

- Growing demand

The global herbal medicine market is expected to grow from \$84.82 billion in 2023 to \$389.75 billion by 2031.

- Sustainable methods

Sustainable methods can help ensure the long-term availability of premium herbs.

- Combining herbal medicine with other approaches

Combining herbal medicine with conventional medicine or Traditional Chinese Medicine (TCM) can enhance patient outcomes.

- Customized remedies

Adapting remedies to specific needs can be a promising field.

- Nutraceuticals

Creating cutting-edge products with targeted health benefits can be a promising field.

- Phytopharmaceuticals

Creating new medications by combining traditional herbal knowledge with contemporary technologies can be a promising field.

However, some herbal medicines can interfere with other medicines or blood clotting, which may increase the risk of bleeding during or after surgery. It's important for doctors to monitor the perceived benefits and adverse effects of herbal treatments consumed by their patients.

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## Conclusion

In conclusion, traditional Indian medicinal plants offer a promising source of natural products for the treatment of psoriasis. The active constituents found in these plants have been shown to possess anti-inflammatory, antioxidant, and immunomodulatory properties that may be beneficial in the treatment of psoriasis. Further research is needed to better understand the mechanisms of action of these compounds and to determine their efficacy in human trials.

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