# Chamomile, Arnica, and Aloe: Bridging Generations of Mexican-American *Remedios Caseros* with Modern Dermatology

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References

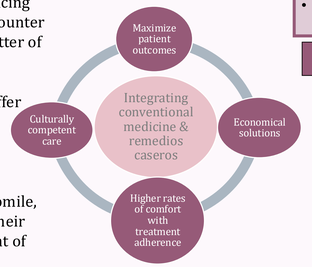
## Introduction

In many Mexican-American households, medicinal herbs are often the first line of defense for common skin ailments. These *remedios caseros* (home remedies) , passed down through generations, reflect a blend of cultural wisdom and practical necessity. Latino communities have relied on *remedios caseros,* like chamomile, aloe, and arnica to treat a wide range of dermatological concerns—from minor burns to inflammatory skin conditions.[1,2]

A study by Arcury et al. highlights the ways in which Latino farmworkers, facing barriers to healthcare, often turn to self-care practices, blending over-the-counter products with these traditional remedies.[3] Such practices are not only a matter of preference but also a testament to the trust in natural remedies, which are perceived as effective, affordable, and culturally relevant.

For many, especially in less acculturated Hispanic groups, these remedies offer comfort and healing in the absence of accessible professional medical care. However, while the use of *remedios caseros* has persisted, there is limited research on their true therapeutic potential in dermatology and the risks associated with their use.

This review focuses on three of the most commonly used remedies—chamomile, arnica, and aloe vera—exploring their roles in Mexican-American culture, their therapeutic implications in modern dermatology, and potential development of novel dermatologic therapeutics.




## Takeaways

- There is a growing space for complementary and conventional medicine to coexist, and potential for its use as an adjunct to current therapy and drive novel dermatologic therapeutics
- By integrating traditional with modern treatments, we can maximize patient outcomes with economical and culturally-resonate solutions—provided that robust, evidence-based research supports their use.
- As practitioners, it is important to remain mindful of the cultural interplay in medicine and welcoming multidimensional support
- There is a necessity for more randomized clinical trials with larger sample sizes to analyze the true efficacy and safety of these home remedies, and any concern for drug interactions.

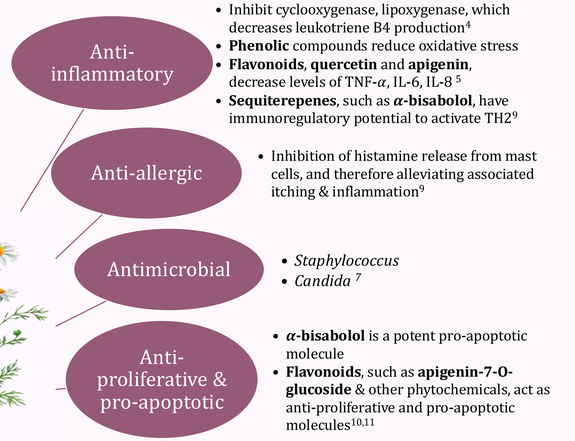
## Chamomile *(Manzanilla)*

**Uses as a *remedio casero***

Indigestion, diarrhea, gastritis, colitis, insomnia, anxiety/ nerves, hemorrhoids, leg ulcers, & soothing agent for dermatitis[8]

**Notable *bioactives***

Flavonoids, phenolic compounds, courmarines, mucilages, & saccharides[4]




- Inhibit cyclooxygenase, lipoxygenase, which decreases leukotriene B4 production[4]
- **Phenolic** compounds reduce oxidative stress
- **Flavonoids**, **quercetin** and **apigenin**, decrease levels of TNF-*α*, IL-6, IL-8 [5]
- **Sequiterepenes**, such as ***α*-bisabolol**, have immunoregulatory potential to activate TH2[9]
- Inhibition of histamine release from mast cells, and therefore alleviating associated itching & inflammation[9]
- *Staphylococcus*
- *Candida* [7]
- ***α*-bisabolol** is a potent pro-apoptotic molecule
- **Flavonoids**, such as **apigenin-7-O-glucoside** & other phytochemicals, act as anti-proliferative and pro-apoptotic molecules[10,11]

### Dermatology therapeutics research

***Atopic dermatitis/eczema***

- Partially double-blind, randomized study: after 2 weeks of treatment, chamomile extract cream showed a slight superiority over 0.5% hydrocortisone[13]

***Acne vulgaris***

- When compared to a standard reference drug, isotretinoin, chamomile demonstrated equivocal efficacy against *Priopionbacterium acnes* and potential as an anti-acne agent[12]

***Plaque psoriasis***

- Decreased formation of leukotriene B4 (LTB4), which is implicated in increased psoriatic plaques[6]

***Radiation dermatitis***

- 8.35% dose of chamomile gel showed to reduce hyperpigmentation compared to urea cream in radiation dermatitis and delay its onset[14]

***Melanoma***

- Anti-proliferative effect on human melanoma SK-MEL-2 cells[15]

**Adverse effects:** Reports of minor allergic contact dermatitis.[16] Courmarine compounds can act as vitamin K antagonists and interfere with anticoagulation medications.[17]

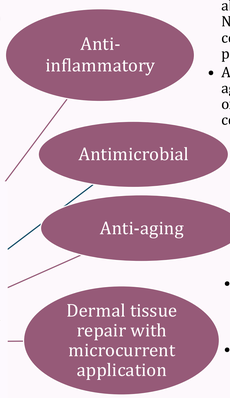
## Arnica *(Arnica)*

**Uses as a *remedio casero***

Arnica has been traditionally used in Mexico to treat bruises, hemorrhoids, insect bites, rheumatism/arthritis, skin inflammation, acne, muscular pain, sprains[18]

**Notable *bioactives***

140+ compounds identified: flavonoids, phytosterols, benzoic acid derivatives, phenolic acids, triterpenes & sesquiterpene lactones, importantly helenalin and dihydrohelenalin[19]




- **Sesuiterpene lactones**: **helenalin** has ability to inhibit transcription factor NFkB, block histamine release from mast cells, and reduce production of proinflammatory mediators[20,21]
- Antioxidant and cytoprotective activity against hydrogen peroxide-induced oxidative stress in fibroblast-like cultured cells[22]
  - Decreased ROS production in Arnica dilutions exposed to LPS-inflamed microglial cells[23]
- Active compounds **6-*O*-methacryloylhelenalin** & **6-*O*-isobutyrylhelenalin** help accelerate the growth and differentiation of human subcutaneous preadipocytes[24]
- Positive effects seen regarding newly formed tissue, number of newly formed blood vessels and percentage of mature collagen fibers[25]
- Reduces the inflammatory process, increases myofibroblasts proliferation and decreases the presence of macrophages in the dermis during skin repair[19]

### Dermatology therapeutics research

***Actinic purpura***

- A product formulated in 2017 containing arnica oil, ceramides, retinol, niacinamide, etc. for the treatment of actinic purpura, which demonstrated efficacy by improving local circulation, thickening the skin, and repairing the skin barrier[26]

***Thermal burns***

- Techniques using a polyvinyl alcohol membrane loaded to arnica combined with laser therapy demonstrated to be a promising new tool in accelerating the second-degree burn healing process and improving inflammatory aspects[27,28]
- Arnica ointment reduced UVB radiation-induced inflammatory response in skin-burn mouse models by inhibiting myeloperoxidase activation, decreasing NFkB levels, and limiting oxidative damage via reduction of lipid peroxidation and increased tissue antioxidant capacity[29]

***Post-surgical ecchymoses and edema***

- A greater reduction of laser-induced bruising treated with 20% topical arnica ointment was seen compared to white petroleum and 1% vitamin K-0.3% retinol mixture, however not compared to 5% vitamin K[30]
- Local application of arnica and mucopolysaccharide polysulfate cream following rhinoplasty postoperatively demonstrated rapid regression of edema and ecchymosis[31]
- Arnica gel patches and/or oral tablets have been administrated to patients to minimize bruising and post-inflammatory hyperpigmentation following a cellulite subcision treatment[32]
- A systematic review analyzed the use of arnica perioperatively in facial procedures demonstrated its potential in mitigating ecchymoses and edema, as well as pain control[33]

***Post-infection induced pain and numbness***

- A patch containing homeopathic arnica tincture improved pain and reduced inflammatory nodules within 3 days of application in a 55-year-old female patient who was suffering from residual pain following a cellulitis infection of her palm[34]

***Cutaneous Leishmaniasis***

- Arnica tincture has proven promising results in treating cutaneous leishmaniasis in golden hamster models compared to the standard drug, and lack of acute or repeated-dose dermal toxicity in mouse models[35,36]

**Adverse effects:** There have been reports of contact dermatitis, priorities, petechiae, and dry skin after using topical arnica.[37,38,39] Systemic toxicity at high doses has been reported.[40]

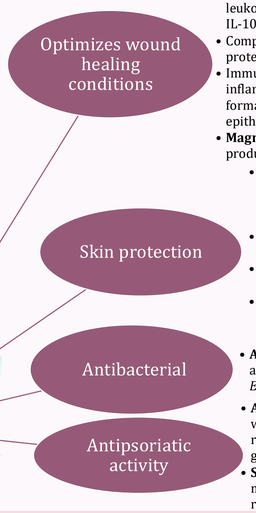
## Aloe Vera *(Sabila)*

**Uses as a *remedio casero***

Dermatitis, cold sores, ulcers, insect bites, skin infections & dermal injuries, such as wounds, burns, sunburns, frostbites[41]

**Notable *bioactives***

75+ compounds identified: salicylic acid, sulfur, zinc, anthrones, magnesium lactate, vitamins, minerals, amino acids, bradykinase, cinnamomic acid, polyphenols, polysaccharides[4,45]




- Reduce inflammation by decreasing thromboxane, prostaglandins, IL-6, IL-8, & TNF-*α* levels, minimize leukocyte adhesion, & increase pro-inflammatory IL-10 levels[42,43]
- Compounds that act as lipid radical scavengers to protect against oxidative stress[42]
- Immunomodulates macrophages by activating anti-inflammatory effects of TGF-*β* leading to improved formation of granulation tissue, angiogenesis, & epithelization[47]
- **Magnesium lactate** prevents histamine production, limiting skin itching and irritation[43]
  - **Glucomannan**, polysaccharides-rich compound, stimulates fibroblast growth factor activity & proliferation, increasing collagen production, downregulating MMP-1, & improving hydration[43]
  - Increases collagen cross-linking, improving skin flexibility & reducing fragility[48]
  - **Methanolic extract** shown ability to absorb UV radiation and have antioxidant activity[49]
  - **Mucopolysaccharides**, **amino acids**, & **zinc** contribute to skin integrity, moisture retention, erythema reduction, & help prevent skin ulcers[43]
- **Acemannan**, a mucopolysaccharide, protects against *S. aureus*, *Streptococcus*, *Klebsiella*, *Enterobacter*, *Citrobacter*, *Serratia*, *Pseudomonas*[44]
- **Anthrones**, like e**modin**, inhibit enzymes associated with cell proliferation & inflammation, interfere with redox reactions resulting in mitochondrial damage, generate ROS during their auto-oxidation[46]
- **Salicylic acid** has anti-kerolytic effects that help minimize plaque and scale formation, and reduce redness[50]

### Dermatology therapeutics research

***Psoriasis***

- More promising control in reducing the symptoms of mild to moderate plaque psoriasis compared to 0.1% triamcinolone acetonide[51]
- Showed efficacy in clearing plaques as 0.5% Aloe vera extract was delivered via a hydrophilic cream[52]
- Moisturizing creams containing aloe butter, such as Venusia Max (Dr. Reddy's Laboratories Ltd.), have found to have positive effects when used as a treatment adjunct[53]
- Topical nanogel showed in vitro mouse model studies as potential adjunct for psoriasis[54]

***Acne vulgaris***

- Combination therapy of topical 0.05% tretinoin cream with 50% AV topical gel demonstrated greater efficacy for mild to moderate acne vulgaris compared to tretinoin alone and placebo[55]
- Systematic review of clinical trials analyzing herbal medicine in the treatment of acne vulgaris (2022): *A. vera* gel minimized the adverse effects associated with the administration of tretinoin. The results of the clinical trials showed that the polyphenol, **epigallocatechin-3-gallate**, is effective in reducing inflammatory and non-inflammatory lesions with few adverse effects[56]
- Continues to show superior efficacy when used as a combination treatment for the treatment of acne[57]

***Chronic diabetic ulcers***

- Increased levels of glycosaminoglycans, faster wound contraction, and improved tensile strength with use of AV gel ethanolic extract for diabetic ulcers in rats[58]
- Shortening healing time of diabetic chronic wounds in Bama minipigs[59]
- Subcutaneous injection of AV gel preparation promoted diabetic wound healing[46]
- AV gel preparation proved to be a cost-effective solution for infected leg ulcers, even against multidrug-resistant organisms as compared to the routinely used topical anti-microbial agents[60]

***Post-surgical wounds***

- More efficacious used as an adjunct to standard treatment of cesarean wounds improving reepithelization by potentially increasing dermal perfusion to decrease ischemia[61,67,40]

***Thermal burns***

- Dermal application as bioadhesive films with vitamin E acetate showed efficacy in reducing the damage and facilitating the healing process in burn wounds[62]
- Significantly reduced mean wound-healing time compared to other topicals in patients with second-degree burns without increased infection risk[63,64,65]

**Adverse effects:** Minimal reports of local adverse events, mainly drying up, stinging, and itching of the skin after the topical application of AV gel, as well as induced dermatitis after post-dermabrasion application [56,66]