

The Longwood Herbal Task Force  
(<http://www.mcp.edu/herbal/default.htm>) and  
The Center for Holistic Pediatric Education and Research  
(<http://www.childrenshospital.org/holistic/>)

### Clinician Information Summary

# ALOE VERA

(*Aloe vera*)

#### **SUMMARY:**

The numerous species of aloe contain two types of herbal remedies: the mucilaginous gel from the middle of the fleshy leaf (used primarily on the skin and mucus membranes) and the sticky, bitter leaf lining (used as a potent stimulant laxative). Aloe gel's traditional use as a topical remedy for burns, abrasions and mucosal irritations is supported by its biochemical constituents as well as *in vitro*, animal and human data. The leaf lining contains anthraquinones that cause diarrhea and cramping acutely, and laxative dependency, dehydration, potassium loss and pseudomelanosis coli with chronic administration. Treatment of peptic ulcers and viral infections with aloe remains experimental. Aloe gel is safe for external use; allergies are rare and adverse interactions with other medications have not been reported. Aloe should not be used internally during pregnancy, lactation or childhood, nor by persons with undiagnosed abdominal pain, appendicitis or intestinal obstruction.

#### **POPULAR USES:**

*External uses (gel):* Minor burns, abrasions, insect bites, acne, poison ivy, skin irritations, frostbite and canker sores

*Internal uses (gel):* Peptic ulcers and other digestive disorders; HIV and cancer are experimental uses

*Internal use (latex leaf lining):* Laxative

#### **CHEMICAL CONSTITUENTS:**

*In the gel:* Polysaccharides (acemannan and glucomannan), carboxypeptidase, and others

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*In the leaf lining:* Anthraquinones (aloin, aloin, aloin, barbaloin)

**SCIENTIFIC DATA:**

*In vitro:* Aloe vera has antimicrobial and antifungal activity against *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Serratia marcescens*, *Citrobacter*, *Enterobacter cloacae*, *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Staphylococcus aureus*, *Escherichia coli*, *Candida albicans*, *Helicobacter pylori*, *Mycobacterium tuberculosis*, *Trichophyton tonsurans* and *Bacillus subtilis*. It also blocks reproduction of HIV and Herpes viruses. It modulates several aspects of the immune system, boosting monocyte and macrophage activity and blocking leukotriene and prostaglandin production; it also enhances angiogenesis.

*Animal data:* Animal studies generally support the efficacy of aloe in treating experimentally-induced wounds, frostbite, burns, and gastric ulcers. Multiple animal studies have demonstrated antineoplastic and immune modulating effects of acemannan extracted from aloe gel. Aloe's anthraquinones are potent cathartics; they had no abortifacient effects in rats.

*Human data:* In most human studies, aloe vera gel has been an effective topical vulnerary for abrasions, burns and frostbite. In one double blind, placebo controlled study among adults with psoriasis, treatment with an aloe extract cream was markedly helpful. Pilot studies suggest it may be helpful in patients with duodenal ulcers. More studies are needed to determine its effectiveness as an adjunctive therapy for HIV and cancer. Aloe's leaf lining has proven an effective laxative, but it has severe side effects including cramping and diarrhea.

**TOXICITY AND SIDE EFFECTS:**

*Side effects:*

*External use:* No reported toxicity. Allergic reactions are rare.

*Internal use:* Aloe gel appears safe. Anthraquinones in the leaf lining can cause severe diarrhea and intestinal cramping. Chronic internal use of anthraquinones can lead to

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potassium loss, dehydration, pseudomelanosis coli and intestinal dependence on laxatives.

*Interactions with other medications:*

*External use:* None known

*Internal use:* The leaf lining (laxative) may reduce absorption of drugs due to decreased bowel transit time, may increase potassium loss in patients taking corticosteroids or thiazide diuretics, and may potentiate digitalis and other cardiac glycosides due to low potassium levels. Mucilage in the gel may interfere with the absorption of other oral medications taken concurrently.

*Contraindications:*

*External use:* None known

*Internal use:* Contraindicated in intestinal obstruction, intestinal inflammation (eg. Crohn's disease, ulcerative colitis), appendicitis and abdominal pain of unknown origin.

*Pregnancy and lactation:* No clinical studies.

*Pediatric use:* No clinical studies or systematic surveillance.

**ADDITIONAL RESOURCES**

- HOME: <http://www.mcp.edu/herbal/default.htm>
- Aloe Vera Complete Monograph: <http://www.mcp.edu/herbal/aloe/aloe.pdf>
- Aloe Vera Patient Fact Sheet: <http://www.mcp.edu/herbal/aloe/aloe.ph.pdf>
- University of Texas Center for Alternative Medicine Research in Cancer:  
<http://www.sph.uth.tmc.edu/utcam/summary/aloe.htm>