

by Assunta Hunter

Aloe vera

Aloe vera: Gel, resin or juice?

A few botanical distinctions are important when it comes to *Aloe vera* preparations. Bear in mind first of all that *Aloe vera* (synonym *Aloe barbadensis*) is a member of the Asphodeliaceae family, and is a succulent accustomed to desert conditions of growth.^{1,2}

Aloe vera gel is the mucilaginous gel produced from the centre (the parenchyma) of the plant leaf. The gel portion of the plant is prepared by peeling the outer portion of the skin and the pericarp away. It is the preparation which is called 'pure Aloe vera gel' in commerce.

Aloes (synonyms aloe resin/aloë latex) is the acrid, resinous compound derived from the outer membrane of the leaf, the pericarp. It is rich in anthroquinone glycosides and has quite different properties to the *Aloe vera* gel.

The '**aloe vera juice**' available commercially is often an ill-defined mixture of the gel and the juice. Its therapeutic action is variable.³

Constituents: Aloe vera gel: glucomannans (including glucose, mannose, glucuronic acid), other polysaccharides including galactogalacturans and galactoglucoarabinomannans. Pectic substances, lupeol, plant sterols and other organic and inorganic steroids have also been identified.³ The most abundant constituent is water (99%).⁴

Aloe resin: contains C-glycosides and resins, anthroquinone glycosides (including aloe-emodin and aloin A and aloin B).⁵

Mechanism of action: Aloe vera gel has been shown to exhibit some wound healing effects including encouragement of granulation tissue, and aloe polysaccharides have demonstrated some positive effects in studies preventing radiation burns in animals.⁶ It is both antimicrobial and anti-inflammatory.⁷ The wound healing properties of the gel are considered to derive from a number of its chemical constituents including its anti-inflammatory, hydrophilic, fibroblast-stimulating and antibacterial properties.

Aloe resin has a strong stimulant laxative effect, as do most anthraquinone rich plant substances.⁴

Dosage and preparations:

Aloe vera gel (stabilised or fresh) 25 ml 1-4 times daily.⁸

Aloe resin 0.1 gm daily⁹

Clinical usage: Aloe vera gel is used in wound healing preparations, (creams, gels and ointments) for the treatment of skin conditions such as burns, psoriasis, radiation burns, and herpes.⁷ It is also used internally in the treatment of ulcerative colitis.



Aloe vera resin is used as a stimulant laxative for the relief of constipation. It is considered to be a drastic cathartic.

Clinical evidence

Aloe vera gel: A 1999 systematic review of the therapeutic efficacy of Aloe vera gel showed some evidence of efficacy in psoriasis and in genital herpes.¹⁰

However more recent studies reviewing its use in radiation induced skin reactions and radiation related mucositis in cancer patients, show no effects better than placebo for wound healing, pain and use of other pain medications.^{11,12}

A further randomised controlled study seems to suggest a lack of efficacy for *Aloe vera* in the treatment of irradiated breast tissue.¹³ In this study the use of aqueous cream was significantly better than *Aloe vera* gel in reducing desquamation and pain due to radiation treatment.

Another recent double blind placebo controlled study of the use of *Aloe vera* gel in the treatment of mild to moderate psoriasis vulgaris showed an effect that was not better than placebo.¹⁴

Research on the use of *Aloe vera* gel in active ulcerative colitis has shown a significant effect in reducing the *Simple Clinical Colitis Activity Test Index*.¹⁵

Aloe resin: There are no clinical studies available on aloe resin.

Interactions: Interactions can occur with other drugs related to electrolyte imbalance. Cardiac glycoside containing drugs are considered a poor combination with *Aloe vera* resin.⁹

Cautions: *Aloe vera* resin can provoke violent diarrhoea and can cause problems with electrolyte balance if used long-term (more than two weeks).⁴

Contraindications: *Aloe vera* resin is contraindicated in children, and in pregnancy.⁸

It is also contraindicated in partial or complete bowel obstruction.⁷

Adverse reactions: Adverse reactions have been reported to *Aloe vera* gel. Hypersensitivity in the form of eczema and contact dermatitis have been reported. There is one report of acute severe hepatitis which has been attributed to an *Aloe vera* preparation. The report speculates that it may have been a hypersensitivity reaction. However the plant preparation was not described, verified or tested for contamination so the report is difficult to evaluate.¹⁶

Use in pregnancy/lactation: *Aloe vera* resin is contraindicated in pregnancy. There is no information about its use in lactation.⁴ *Aloe vera* gel may be used externally in pregnancy and lactation. There is no evidence about its use internally in pregnancy and lactation.

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