

**Anti-inflammatory effects of aloe vera gel in human colorectal mucosa in vitro.**

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**Abstract:**

**BACKGROUND:** Oral aloe vera gel is widely used by patients with inflammatory bowel disease and is under therapeutic evaluation for this condition. **AIM:** To assess the effects of aloe vera in vitro on the production of reactive oxygen metabolites, eicosanoids and interleukin-8, all of which may be pathogenic in inflammatory bowel disease. **METHODS:** The anti-oxidant activity of aloe vera was assessed in two cell-free, radical-generating systems and by the chemiluminescence of incubated colorectal mucosal biopsies. Eicosanoid production by biopsies and interleukin-8 release by CaCo2 epithelial cells in the presence of aloe vera were measured by enzyme-linked immunosorbent assay. **RESULTS:** Aloe vera gel had a dose-dependent inhibitory effect on reactive oxygen metabolite production; 50% inhibition occurred at 1 in 1000 dilution in the phycoerythrin assay and at 1 in 10-50 dilution with biopsies. Aloe vera inhibited the production of prostaglandin E2 by 30% at 1 in 50 dilution ( $P = 0.03$ ), but had no effect on thromboxane B2 production. The release of interleukin-8 by CaCo2 cells fell by 20% ( $P < 0.05$ ) with aloe vera diluted at 1 in 100, but not at 1 in 10 or 1 in 1000 dilutions. **CONCLUSION:** The anti-inflammatory actions of aloe vera gel in vitro provide support for the proposal that it may have a therapeutic effect in inflammatory bowel disease.