

ALOE VERA, A GLYCONUTRIENT

Dr. H.R. McDaniel, M.D., an affiliate of Mannatech Inc., has spent 16 years exploring the therapeutic nature of Aloe Vera. In 2000, McDaniel addressed Comprehensive Cancer Care, a conference highlighting the latest and most promising of current techniques converging upon cancer therapy. As a result of this appearance, Dr. McDaniel was invited (August 28, 2001) to present the glyconutrient principle before the Royal Society of Medicine (London, England) and the United Nations-sponsored 17th International Conference on Nutrition. The following material (excerpted from these presentations) should be viewed as part of an integrated approach to treat cancer, not as an independent therapy.

The virtues of the aloe plant (chronicled in the writings of Hippocrates) have evolved to include a strong anticancer connection (Corsi et al. 1998). It was determined that aloe juice reduced tumor mass and the frequency of metastasis in rats (Gribel et al. 1986). Aloe protected individuals with weakened immune systems against infection (Klein et al. 1988). Random scientific papers, plus scores of anecdotal reports relating to cancer regressions, spurred a group of physicians and scientists to study the nature and role of carbohydrates in biological events; a science referred to as glycobiology emerged.

The active ingredients in aloe are eight chains of mannose sugars, (glucose, galactose, mannose, fructose, xylose, N-acetylglucosamine, N-acetylgalactosamine, and N-acetylneuraminic acid). Scientists determined that the eight sugars (super carbohydrates), frequently missing in the diet, are important to intercellular communication (Reynolds et al. 1999).

Glycoproteins (on the surface of every cell) serve as signals to tell other cells who they are and what they need. If the cells do not have enough of the right sugars, they cannot make the correct glycoproteins, and the cell-to-cell messages become disrupted. Subsequently, the immune system cannot effectively wage an offensive against bacterial and viral pathogens or rapidly dividing cancer cells. The sugars of aloe ensure that internal networking (cell-to-cell communication) is swift and accurate.

Note: *The reader should not confuse the natural sugars of Aloe vera with sucrose, that is, common table sugar. The sugars contained in glyconutrients are naturally occurring sugars (not sweet to the taste) that elicit no blood glucose rise or insulin rush.*

A number of enzymes (endonucleases, hydrolases, esterases, and lipases) are produced from the sugars of aloe. Enzymatic reactions power up lymphocytes, white blood cells (about a trillion in number) that bear the major responsibility of immune surveillance. When white blood cells phagocytose (envelop and destroy) bacteria, virus, and cancer, enzymes produced on the mannose system optimize the cell's performance.

Aloe vera has an extraordinary antioxidant profile, with much of its activity gained by increasing reduced glutathione levels (Hu et al. 2003). Antioxidants neutralize free radicals produced as a result of aggressive cancer treatments, as well as those produced naturally through biological events. For example, as the mitochondria produce energy to fuel cellular functions, a plethora of free radicals results. A cell deprived of reduced glutathione is unprotected and subject to free-radical damage (a precursor to cancer) (Toyokuni 1998). Reduced glutathione can independently protect against free radicals or increase the efficiency of vitamin E (a lipid-soluble antioxidant), vitamin C (a water-soluble antioxidant), and superoxide dismutase (an enzyme that converts superoxide radicals into less toxic agents). Many patients may be able to complete aggressive courses of chemotherapy when aloe accompanies treatment (Nersesian et al. 1990; Wang et al. 2001).

Dr. Glen Hyland, a Mayo trained oncologist, reviewed the health histories of 100 cancer patients (extracted from a three-state analysis) who used glyconutrient therapy as a part of their cancer treatment. Dr. Highland marveled at the speed at which patients receiving glyconutrients experienced a reduction in the size of squamous cell carcinomas (lung) and oat cell carcinomas (usually originating in the bronchi or lungs). Numbers of erythrocytes (red blood cells), leukocytes (white blood cells), and thrombocytes (platelets) did not diminish when glyconutrients were a part of cytotoxic therapies. Dr. Hyland commented that normal cells appeared protected and abnormal cells appeared more sensitive to treatment, when Aloe vera was a part of an integrated approach.

Various cancer patients have experienced remarkable reversals in health status after adding aloe to their protocol. It was, in fact, triumphant accounts of Aloe vera enhancing the efficacy of previously failed treatments that spurred the glyconutrient movement. From the files of Dr. McDaniel, a few case studies have been extrapolated to illustrate the value of Aloe vera as an adjunct in cancer therapy.

- A male (68 years old) presented the symptoms of obstructive urinary symptoms, elevated PSA, and more than 100 nodules of metastatic lesions in the lungs. Dreadfully ill and having failed other therapies, polymannose, a first-generation glyconutrient discovered in the early 1980s, was added to the protocol. After an additional year of conventional therapy (that included Aloe vera), the lungs were cleared of nodules, energy levels rebounded, and quality of life returned. He appears quite healthy as he approaches the 10th anniversary of being told his condition was terminal.
- A researcher, trained under a NIH cancer fellowship and hostile toward the carbohydrate/cancer theory, reluctantly entered into a trial to determine the value of glyconutrients in cancer treatment. Laboratory mice were injected with Norman's Sarcoma, a type of cancer carrying a 100% death rate; half of the test animals were also injected with 1 mg/kg of the glyconutrient polymannose. About 1 month into the trial, all control animals were dead; conversely, all animals receiving one injection of polymannose were alive, and at the 2-month interval, 40% had survived. Amazed with the results, the researcher repeated the test, but doubled the concentration of the carcinogen. The results were, nonetheless, the same. The odds improved when the therapeutic injections were increased: 52% were alive when receiving 1 injection per week, and 67% survived when the complete formula (all monosaccharides required for glycoprotein synthesis) was injected.
- A 38-year-old breast cancer patient presented with 10 lytic skeletal bone lesions and a mass appearing on the neck. The patient also had liver involvement and ascites (an intraperitoneal accumulation of water and electrolytes) making her appear 8 months pregnant. Having failed earlier courses of chemotherapy, the treatment was repeated, but this time glyconutrients were a part of the protocol. At 1 year, the ascites had cleared, and no evidence of cancer was detected. She survived approximately 7 years after being advised by her oncologist that she had less than 6 months to live.

Reports of Aloe vera being life-saving to cancer patients are not scarce. Dr. Julian Whitaker reported that a 10-year-old boy diagnosed with a rare brain tumor (a meningioma) went into total remission after drinking 8 oz of whole-leaf Aloe vera concentrate a day for 3 months. Because surgeons were unable to remove the entire tumor, its continued growth rendered an uncertain prognosis. At the time of the Whitaker report, the child was living a normal life and participating in sports but drinking Aloe vera juice every day (Whitaker 1995).

The following animal trials are included to add additional strength to human studies. Acemannan, a polysaccharide (carbohydrate) isolated from aloe rind, was administered intraperitoneally and intralesionally to 43 dogs and cats with spontaneous tumors. Twenty-six of the animals showed histopathological evidence of immunological attack, evidenced by marked necrosis or lymphocytic infiltration. Twelve animals experienced obvious clinical improvement as assessed by tumor shrinkage, tumor necrosis, and prolonged survival (Harris et al. 1991).

Feline leukemia is a disease induced by an oncornavirus infection that inevitably causes death to clinically affected cats. It has been estimated that 40% of cats are dead within 4 weeks and 70% are dead within 8 weeks of the onset of symptoms. Administering acemannan for 6 weeks intraperitoneally to clinically symptomatic cats significantly improved quality of life and survival rates: 12 weeks after initiation of treatment, 71% of treated cats were alive and in good health. This study joins a medley of others, affirming Aloe vera's worth in veterinary settings (Sheets et al. 1991).

Oral administration of Aloe vera is remarkably safe. It is, in fact, difficult to estimate lethal dose ranges via animal studies (Ikeno et al. 2002).

Suggested dosage: Begin with 2 tsp of glyconutrient powder 3 or 4 times a day. Some find they must slowly increase the dosage to achieve maximum benefits.