

International Aloe Science Council

Abstract IASC

Aloe: The source of the Master Glyconutrient

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Aloe vera gel has been documented to have been in use by human beings as a health promoting substance for over 5,000 years. It was not until the mid-1980s it was recognized that the principle moiety found to promote healing is a complex polysaccharide containing over 90% mannose sugars linked in chains that yield mannose-6-PO, then engulfed by macrophages and cleaved by a beta 1-4- mannosidase lysosomal enzyme. Assisted by a review in Annual Review of Biochemistry 1985 Kornfeld and Kornfeld, this author recognized that nine molecules of this mannose sugar are required in the endoplasmic reticulum to initiate the synthesis of the structure/function molecules made in human cells. For a saccharide to be so fundamental in life processes other than to be supply of energy was a major departure from accepted scientific dogma. Compounding this problem was that by serving at such a vital step and being a key component unit in cellular synthesis, increasing the supply of mannose supported the dynamics of the Michaelis-Menten phenomenon that enhances the synthesis of general defense and healing compounds made by cells required to restore homeostasis in numerous health compromises. The passage of the Dietary Supplement Health and Education Act of 1994 (DSHEA) led to thousands of citizens consuming concentrated aloe polymannose. The return of such a micronutrient to the human diet initiated and supported Improvements in health in an unparalleled and unbelievable manner. Skepticism for such a power to improve health was rampant, especially for those totally oriented to use or that have a vested interest in pharmaceuticals.

Despite numerous national and international presentations, the basic science principles and clinical responses reported were ignored. However, many basic scientists continued to do investigations into the role sugars play in the molecular biology and biochemistry that constitute the processes of life. A hallmark event was the publication of 15 review articles on Glycoscience found in Vol. 161, of Acta Anatomica in 1998. It was shown that cell relationships from attraction of the sperm to the egg, embryological growth development and differentiation, cell adhesion, defense, healing, and programmed cell death with regeneration (apoptosis), is regulated by a sugar-coding domain in activator molecules.

Such sugar molecules are a component of protein and lipid chains. Sugars were stated to an alphabet of coded biological instruction and to conduct and/or participate in processes essential for life that exceed the information carried in DNA located in the chromosomes. This epic issue was largely ignored in North America until the journal Science published 12 articles on Glycobiology in March 2001. More recently Scientific American July 2002 issue published a review on the cardinal role of sugars in medicine and health. The medical and scientific community is now rapidly accepting the power of dietary sugars low or absent in the modern diet, to support restoration of health.

The pharmaceutical industry is attempting, by lobbying for new government regulation to expand the definition of drugs to include any substance, such as dietary sugars, represented or taken to improve health or enhance physiology, to be regulated as a pharmaceutical drug.

In London, England, The Health Alliance reports an active role is being played by the Food and Drug Administration (FDA) in its office in Brussels, Belgium, by advising the European Union (EU) Parliament to adopt a broad definition that would classify as a drug, any natural dietary or herbal substance that has health benefits. The theme of harmonization of FDA regulations with the EU is being developed. Observers charge that the FDA, having been thwarted in its opposition to the passage of DSHEA and attempts to circumvent the legislation have been rebuked by challenges in federal court, is now attempting an end-run to accomplish

its long-term goals for maximizing the agency's regulatory authority. Thus, drug development steps organized into three stages of FDA evaluation that cost up to five hundred million dollars and commonly require 10 to 15 years of drug development testing, would be applied to dietary supplements that are effective or if any claims to improve health are made.

Under the health freedom provided by the DSHEA, the use and remarkable improvements enjoyed by the citizens of this nation who have the liberty to choose natural and nutritional substances are being challenged by industry and a government agency that wishes to market and control any substance or agent that improves health. Recognition of this newly recognized nutritional technology and protection of the right of the people to use such dietary substances, while keeping the cost relatively low, must command the attention and diligent action of the citizens of this nation. It should be recognized that the use of aloe and other micro-nutrients to improve health is not a fad or untested new principle. The favorable results realized are based on nutrition and biochemistry as old as life itself.