The Antidiabetic Activity of Aloe Vera

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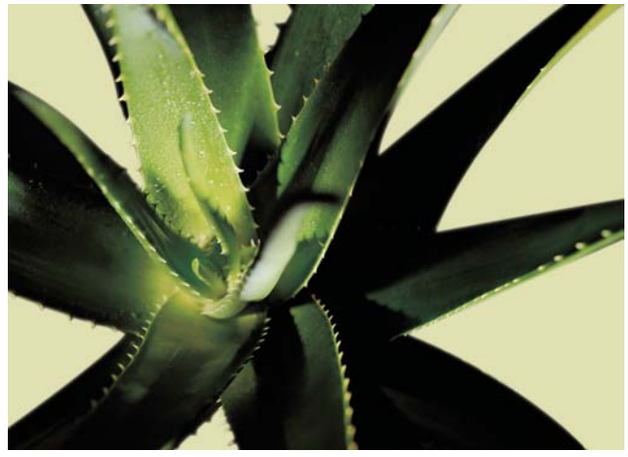
Abstract

Type II diabetes is one of the leading causes of death worldwide. Studies have shown that diabetics appear to have decreased antioxidant defense capability with lower levels of specific antioxidants such as vitamin C and E, or reduced activities of antioxidant enzymes. Research shows that even moderately elevated blood sugar levels increase the risk of cardiovascular disease. Researchers have found that some plant polysaccharides have the potential to control blood sugar, stimulate the body's own antioxidant production and even lower cholesterol. Aloe vera is the best known of these polysaccharide rich plants and it is at the forefront of research in the quest for functional foods that can promote wellness.

Introduction

Statistics compiled by the American Diabetes Association (ADA) show that diabetes was the sixth leading cause of death in 2000, and it is estimated that 18.2 million people in the United States have diabetes. The ADA reports that heart disease is the leading cause of diabetes-related deaths, citing that adults with diabetes have heart disease death rates and risk of stroke from two to four times higher than adults without diabetes. Diabetes has been linked to factors associated with a Western lifestyle, but the reality is that Diabetes is one of the leading causes of death worldwide. Research has shown that being overweight or obese are leading risk factors for developing Type-II diabetes. The ADA Web site offers information on weight loss and a brochure titled "Weight Loss Matters" to provide advice on how to start losing weight and become more active.

Diabetes is a deficiency or absence of the hormone insulin, which is the main hormone responsible for the control of sugar in the blood. Research indicates that even moderately elevated blood sugar levels can increase the risk of cardiovascular disease, morbidity and mortality, even in non-diabetics. Research also shows that elevated blood sugar leads to increased oxidative stress and that in diabetics there is evidence that increased production of free radicals may be a contributing factor in the complications seen in diabetes. According to the National Institute of Health (NIH), studies have shown that patients with diabetes appear to have decreased antioxidant defense capability with lower levels of specific antioxidants such as vitamin C and E, or reduced activities of antioxidant enzymes such as catalase, superoxide dismutase (SOD) and glutathione peroxidase.



People with Type I diabetes must take insulin because their bodies do not make enough of it, whereas people with Type-II diabetes benefit by reducing blood sugar levels through exercise and a healthy diet. However, it is not uncommon for people with Type-II diabetes to require medication to stimulate the pancreas to produce more insulin, decrease the amount of glucose made by the liver, slow the absorption of starches in the diet, or take a combination of medications to control blood sugar. But the management of diabetes without any side effects is still a challenge and has increased the demand for research on natural products with antidiabetic activity.

A growing body of *in vitro* and *in vivo* research shows that Aloe vera has significant antidiabetic activity. In a human clinical trial[1] conducted at the Mahidol University of Bangkok, Thailand and