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A Randomized, Double-blind, Placebo-controlled, Clinical Study of the *in vivo* Antioxidant Effects of a Standardized *Lycium barbarum* (Goji) Juice, GoChi™

BACKGROUND

For thousands of years, the goji berry (*Lycium barbarum*) has been a mainstay of Traditional Chinese Medicine (TCM), and its remarkable and diverse health-promoting properties have earned it a reputation as Asia's most potent health food. Goji's ancient tradition is now being confirmed by modern science, and dozens of published research papers have revealed that the goji berry's broad-based health benefits are due primarily to the presence of unique molecules, not found in any other fruit, called *Lycium barbarum* polysaccharides (LBP). Unlike dried berries or any other goji product, FreeLife's GoChi™ is standardized to an unprecedented potency of the all-important LBP.

In a recent clinical study, which was accepted for publication in the peer-reviewed *Journal of Alternative and Complementary Medicine*, participants who used GoChi experienced significant improvement in 13 key aspects of health and well-being in just 14 days.* The new antioxidant study discussed herein is yet another demonstration of the remarkable power of GoChi, and it illustrates FreeLife's ongoing commitment to lead the nutrition industry in clinical research, product efficacy, and evidence-based product formulation.

REASONS FOR THE STUDY

Antioxidants play an important role in preventing damage to the body caused by harmful environmental oxygen free-radicals. Although ordinary oxygen (O₂) is necessary for life, its free-radical forms are unstable and can attack healthy cells, causing premature aging and contributing to disease. For this reason, many people seek to increase their intake of dietary antioxidants, especially foods and beverages with high scores on a laboratory test called ORAC (Oxygen Radical Absorbance Capacity). But ORAC only measures antioxidant potential in a test tube and does not take into account the complexities of the human body. Many food antioxidants, particularly those found in fruits and fruit juices, are not well-absorbed and so they become trapped in the digestive tract. The poor bioavailability of fruit antioxidants has been well-documented in important research papers.^(1,2)

It is far more meaningful to human health to maintain high serum levels of the body's own (endogenous) antioxidants, namely superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px). These vital antioxidant enzymes circulate in the blood throughout the entire body to neutralize all types of free radicals before they can do harm. The enzymes have other important functions as well: SOD plays a key role in the body's inflammation responses, and glutathione enzymes like GSH-Px are necessary for many detoxification processes. Both enzymes are especially effective at reducing lipid peroxidation, a particularly dangerous form of free-radical damage that is associated with increased health risk. In blood tests, lipid peroxidation is indicated by the presence of the toxic body chemical malondialdehyde (MDA).

Prior third-party research studies in cell culture and in animals have suggested that goji's bioactive LBP might improve antioxidant protection by reducing MDA and increasing SOD and GSH-Px. This study is the first controlled human clinical trial to attempt to demonstrate an actual *in vivo* increase in antioxidant power and a corresponding decrease in harmful free-radical activity.

¹ Manach C, Scalbert A, Morand C, Rémésy C, Jiménez L. Polyphenols: food sources and bioavailability. *Am J Clin Nutr* 2004; 79: 727-47

² Scalbert A, Williamson G. Dietary intake and bioavailability of polyphenols. *J Nutr* 2000; 130(8): 2073S-2085S

STUDY DESIGN

This randomized, double-blind, and placebo-controlled 30-day clinical trial was conducted at a prestigious independent research institute in Asia and was designed to conform to the spirit of US FDA Good Clinical Practice. Fifty healthy adult subjects were divided into two groups selected at random to ensure fair and even distribution of health status between the two groups. The **GoChi group** was administered 120 ml (4 fl. oz.) daily of GoChi™. The **placebo group** received the same daily dosing of an inactive placebo, a control solution that tasted, smelled, and looked like GoChi, but did not contain any goji juice or LBP. Neither the participants nor the scientists had any knowledge as to which group was drinking the GoChi and which was drinking the placebo. Furthermore, the participants and scientists had no affiliation with FreeLife®, and had no familiarity with GoChi or Himalayan Goji® Juice prior to the start of the study.

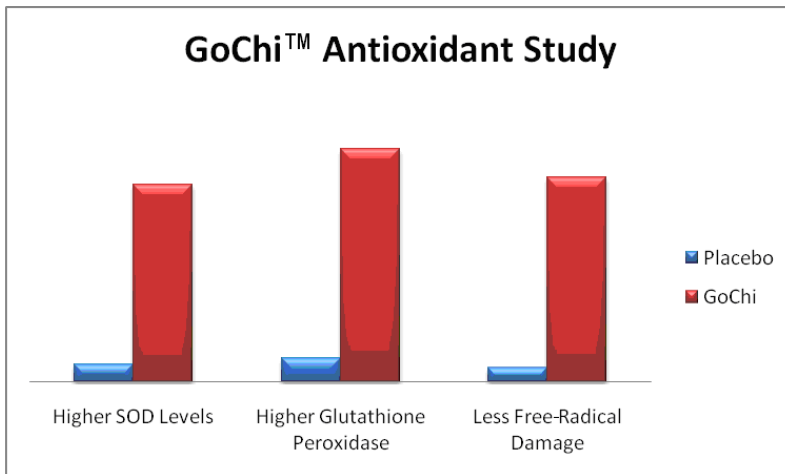
Before beginning the study, all participants were tested for serum levels of SOD, GSH-Px, and MDA. There were no significant differences in starting point levels between the two groups, thus confirming suitability and compatibility. After the 30-day duration of the trial, serum analysis was performed once again in each group to determine statistically if there were any significant changes in serum SOD, GSH-Px, and MDA between the start of the study and its completion.

RESULTS

The GoChi group showed highly significant ($p < 0.01$) improvements in serum levels of both endogenous antioxidant enzymes. SOD was increased by 8.39% over the starting point, and GSH-Px was increased by 9.87%. Along with the increased antioxidant activity observed in this study, there was a corresponding reduction in MDA, a prime indicator of free-radical damage and a known health risk factor. MDA levels were improved significantly ($p < 0.05$) in the GoChi group, decreasing 8.66% during the course of the study. No statistically significant changes were found in the placebo group for any of the three serum markers tested. There were no adverse events reported by any subjects in either the GoChi or the placebo group during the study period.

CONCLUSION

The results shown in this randomized, placebo-controlled, double-blind clinical study clearly indicate that daily consumption of GoChi can help to improve health by increasing two important endogenous antioxidant enzymes and by reducing a key marker of toxic lipid peroxidation.*



For use in the United States, Puerto Rico, and Canada only.

* This statement has not been evaluated by the US Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.