

Goji Wolfberry Studies

Gou Qi Zi *Lycium barbarum* (Wolfberry fruit; Lycium fruit)

Chinese wolfberries grow in a remote area of central China near Inner Mongolia. Considered a treasure by the local people, they have been studied by Chinese physicians for thousands of years.

One Chinese Medica dating back 2,000 years cites the use of wolfberries in treatments ranging from replenishing vital essences to strengthening and restoring major organs.(1,2) Wolfberry fruits are used in many herbal formulas to maintain overall health when suffering from chronic conditions, such as weariness of the loins and legs, dizziness and ringing in the ear, visual degeneration, headaches, chronic liver diseases, diabetes, tuberculosis, and hypertension.

Scientists in modern China have extensively studied wolfberry fruits, their nutrients and their medical benefits. They have further substantiated the ancient medical applications such as: maintain healthy immune system (including specific and non-specific immune response), improving eye conditions, support healthy liver function, maintain healthy blood pressure and blood sugar. Wolfberry is also an excellent herb for anti-oxidant and antiaging.

In 1983, the Ministry of the Public Health of China approved Wolfberry to be marketed as a natural food or botanical medicine (17).The wolfberry has been declared a national treasure by the State Scientific and Technological Commission in China and has become a secret weapon used by Chinese Olympic swimmers to achieve top ranking in the recent National Games. Since the early 1980's, the Chinese wolfberry has been the subject of a number of important clinical studies which substantiate its historical use in improving health. Several of these studies were published by the prestigious State Scientific and Technological Commission in China.

These studies have documented the antioxidant and immune strengthening properties of the Chinese wolfberry (Register # 4848484 and # 5858585). More studies by the Chinese government have shown that Chinese wolfberries are extremely useful for protecting the liver, improving the quality of blood, and improving vision, etc.

Read on to learn more about what the wolfberry studies show:

1. SUPPORTS HEALTHY IMMUNE SYSTEM:

Many studies have shown wolfberry fruits support a strong immune system by increasing the lymphocyte transformation rate and improve the macrophage phagocytic function in animals (uptake of waste material, such as microorganisms or cell fragments into a cell). Wolfberry assists spleen lymphocyte transformation induced by Concavalin A (7). It increases the antibody reaction to T cell-dependant antigen (SRBC) which means that wolfberry selectively strengthen the T cell immune response (8). Wolfberry enhances the T cell immune response by increasing the number of E receptors on the surface of T cells or increasing the numbers of T cells directly. One study was done on seniors in China. This study showed after taking wolfberry, lysozyme, IgG and IgA in serum increased in all participants.

The activities of interleukin 2 (IL-2) were found to increase 2.26 fold in twothirds of the participants.

2. ANTI-AGING PROPERTIES:

Wolfberries have been traditionally regarded as a longevity, strength-building, and sexual potency food of the highest order. In several study groups with elderly people the berry was given once a day for 3 weeks, many beneficial results were experienced and 67% of the patients T cell transformation functions tripled and the activity of the patients white cell interleukin-2 doubled. In addition, the results showed that all the patients spirit and optimism increased significantly, appetite improved in 95% of the patients, 95% of the patients slept better, and 35% of the patients partially recovered their sexual function.

According to one study published by the State Scientific and Technological Commission of China, the Chinese wolfberry caused the blood indexes of aged volunteers to noticeably "reverse to a young state."

Wolfberry fruit functions to maintain normal cell growth and improve DNA restoration and repair. Plus the function of anti-peroxidation of free radicals, therefore changing the electrical parameters of cell membranes to the normal range (9). In one study in China, a 48% increase of Super Oxide Dismutase and a 12% increase of hemoglobin were found in serum for all senior participants. A 65% decrease of LPO in serum was found in the same study. This indicates wolfberry fruit is a

potent anti-oxidant, which may slow the aging process.

Wolfberries have a higher antioxidant status than most foods ever studied. According to a new laboratory test known as the ORAC (Oxygen Radical Absorbance Capacity), developed by researchers at Tufts University, here's how some common foods rate in their ability to neutralize free radicals:

Top Antioxidant Foods ORAC

Wolfberry Juice 3,472

Vitamin E oil 3,309

Pomegranates 3,037

Blueberries 2,400

noni fruit 1,506

Raspberries 1,220

3. CANCER PREVENTION:

Wolfberry fruit has been shown to inhibit gene mutation and the growth of cancer cells. Other studies from China show an extract from wolfberry fruit inhibits the gene mutation induced by TA98 and TA100 (16). Some scientists believe that wolfberry fruit may be a very good supplement to prevent liver cancer because it exerts liver protection and anticancer effects at the same time.

Seventy-nine advanced cancer patients in a clinical trial in China were treated with LAK/IL-2 combined with wolfberries (10). Initial results of the treatment from 75 available patients indicate that objective regression of cancer was achieved in patients with malignant melanoma, renal cell carcinoma, colorectal carcinoma, lung cancer, nasopharyngeal carcinoma, and malignant hydrothorax. The response rate of patients treated with LAK/IL-2 plus wolfberries was 40.9% while that of patients treated with LAK/IL-2 alone was 16.1% ($P < 0.05$). LAK/IL-2 plus wolfberry treatment led to a more marked increase in NK and

LAK cell activity than LAK/IL-2 alone. The mean remission in patients treated with LAK/IL-2 plus wolfberry also lasted significantly longer. The results indicate that wolfberries may be used as an adjuvant in the biotherapy of cancer.

Another study from China showed wolfberries increased the sensitivity to radiation therapy (11) and enhanced the immune system for cancer patients.

4. LIVER PROTECTION:

One study in China discovered that the hepaprotective component (zeaxanthin dipalmitate) from wolfberry helps counteract carbon tetrachloride induced hepatotoxicity (12). Another study from China found wolfberries exerts hepaprotection through inhibiting the lipid peroxidation of liver cells in aging mice (13). Wolfberries help to repair liver cell injury induced by CCl₄ and facilitates recovery from hepatic necrosis (14).

5. HEMOPOIESIS PROMOTER:

A study in China showed wolfberries facilitated stem cell proliferation and increased the number of monocytes in bone marrow (15). Wolfberries helps the monocytes to convert to matured leukocytes.

6. VISION IMPROVEMENT:

Studies by the Chinese government have shown that Chinese wolfberries are extremely useful for improving vision.(6)

Wolfberry fruits were very popular for their vision improvement properties in ancient China. Modern Chinese scientists found wolfberry fruits reduce dark adapting time and improve vision under subdued light. Physiologic scotoma decreased and vitamin A increased in patients after taking wolfberry fruits. This may be attributed to the fact that wolfberries have more beta-carotene than carrots.

8. NUTRITION AND ATHLETIC ENHANCEMENT

Wolfberries, are perhaps the most nutritionally dense fruit on the planet. Wolfberries contain 18 kinds of amino acids and contain all 8 essential amino acids (such as isoleucine and tryptophan). Wolfberries contain up to 21 trace minerals (the main ones being zinc, iron, copper, calcium, germanium, selenium, and phosphorus). Wolfberries are the richest source of carotenoids, including beta-carotene (more beta carotene than carrots), of all known foods or plants on earth!

They contain 500 times the amount of vitamin C, by weight, than oranges. These berries also contain vitamins B1, B2, B6, and vitamin E. Mature fruits contain about 11 mg or iron per 100 grams, beta-sisterol (an anti-inflammatory agent), linoleic acid (a fatty acid), sesquiterpenoids (cyperone, solavetivone), tetraterpenoids (zeaxanthin, phycocyanin), and betaine (0.1%).

Wolfberries contain polysaccharides which fortify the immune system. A polysaccharide found in this fruit has been found to be a powerful secretagogue (a substance that stimulates the secretion of rejuvenative human growth hormone by the pituitary gland).

More about Wolfberries

Native to east Asia and Europe, the wolfberry grows wild on hillsides in the cooler regions of northern China and Europe. However, it is also grown as a cultivated plant in almost all parts of China and in some other regions of Asia, as well as naturalized in Britain, the Middle East and North America.

Wolfberry plants grow like bushes with vines that reach over 15 feet. It is in flower from June to August, and the seeds ripen from August to October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by bees. The plant can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure. Its tender leaves are edible and the fruits and roots are used as medicinal foods. The bright red berries are usually harvested in late summer or early autumn when the fruit is mature. The berries are never touched by hand as they will oxidize and turn black if touched while fresh. They are shaken onto mats, then sun dried in partial shade until the cortex is wrinkled, and then dried in the sun until the fruit is crusted with the pulp still soft. They are often used unprepared. The roots are usually harvested in the spring, although they can be dug any time of the year. The roots can be used either fresh or dried.

Dried wolfberries are about the same size as a raisin. Some people say The Wolfberry tastes somewhat like a cross between a cranberry and a cherry. A good daily intake of Wolfberries is 20-40 grams or 3-4 tablespoons or more. Wolfberries may be used as snacks or mixed with recipes or smoothies like other dried fruits.

Resources

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