



# GOJIRICH™ SUPER STRENGTH GOJI BERRY CONCENTRATE

Promotes healthy aging

## A TRADITION OF MEDICINAL USE

The nutritional and medicinal properties of the goji plant, *Lycium barbarum*, have been prized in Asia for thousands of years. While the bark, roots, and leaves also have medicinal uses, it is the bright red goji berries that have become popular in the West. In Traditional Chinese Medicine goji berries have been used to promote longevity, improve vision and circulation, boost the immune system, and support the liver and kidneys. The remarkable properties of goji berries are now being investigated by scientists around the world.

Recent research has found that goji berry pulp is rich in vitamins A, B, and C, and contains 11 essential minerals and 22 trace minerals, omega-6 fatty acid, and 18 amino acids. By weight, it contains up to 31% polysaccharides, an excellent source of dietary fibre. Goji berries also offer an unusually broad spectrum of antioxidants, being one of the few berries to have pigments from both the water-soluble polyphenols and the lipid-soluble carotenoids. They have unusually high amounts of an antioxidant polyphenol called ellagic acid (86 mg per 100 g) and one of the highest total phenol concentrations published for a berry. Goji also contains an exceptionally wide range of carotenoids: beta-carotene, lutein, zeaxanthin, lycopene, and beta-cryptoxanthin.

These findings have led to research on goji's effects on health. An American clinical trial found that supplementing the diet with standardized goji juice produced significant health benefits in only two weeks. The randomized, double-blind, placebo-controlled study of healthy adults found that goji juice increased energy, athletic performance, sleep quality, ease of awakening, mental acuity, and feelings of health. These effects were not seen in the group receiving a placebo (Amagase).

## CONCENTRATED AND SUSTAINABLE

Although goji juice is popular, it may not be the best way to consume goji. During processing, the juice must be pasteurized, a heating process that damages some of the nutrients. An extract is a better choice for a nutritional supplement since heating is not required, the dosage can be standardized, and the high-potency concentrate can be encapsulated.

Natural Factors GojiRich Super Strength Goji Berry Concentrate contains the whole fruit, not just the juice, because many of the nutrients are found in the skin and seeds. The berries are sustainably harvested at their antioxidant peak, and instead of the conventional "continuous throughput" processing, the berries are processed in small batches, using advanced Enviro-Simplex® technology, to protect the nutrients from heat and oxidation. Forty kg of sustainably-harvested fruit go into

each kg of GojiRich concentrate. Following GMP standards, this superior concentrate is free of added sugar, preservatives, additives, and chemical solvents, and is rigorously tested for pesticides and sulphur compounds.

## THE HEALTH BENEFITS OF GOJIRICH

- Inhibits free radical damage to the body's cells
- Reduces the risk of cancer and cardiovascular disease
- Reduces the risk of Alzheimer's disease
- Reduces the risk of age-related macular degeneration and glaucoma
- Supports liver health
- Improves energy levels and mental concentration

## SUPPORTS HEALTHY AGING

The anti-aging properties of goji are well-known in Traditional Chinese Medicine. Modern research, in China and elsewhere, is discovering how goji helps protect the body from free radicals that cause cumulative cell damage, a significant factor in many age-related disorders, including cardiovascular disease, cancer, and Alzheimer's. Due to the body's declining ability to neutralize free radicals as it ages, it is beneficial to provide nutritional sources of antioxidant protection.

Researchers at the Chinese Academy of Sciences found that goji's antioxidant flavonoids reduced the peroxidation of lipids, a process that damages mitochondria (the powerhouses inside our cells) and that the protection was dose dependent. The fluidity of the mitochondrial membrane was also protected (Huang). The same researchers found that goji inhibited the peroxidation of LDL ("bad") cholesterol, a process that damages arterial walls.

A goji berry extract, *Lycium barbarum* polysaccharides (LBP), significantly reduced the rise in blood pressure of hypertensive rats. It appeared to affect the endothelium, perhaps by increasing its production of a relaxation compound (Jia). LBP was also found to inhibit the proliferation of human leukemia HL-60 cells, in a dose-dependent manner, by inducing apoptosis (cell death) in those cells (Gan).

Goji was also found to protect the heart from injury caused by certain chemotherapy drugs. Rats receiving the drugs plus goji extract had reduced myocardial injury compared to a control group receiving only the drugs.

Ellagic acid, an antioxidant abundant in goji, was found to block cancer initiation in cells from the human respiratory system. It protected the cells by preventing carcinogenic pollutants, such as polycyclic aromatic hydrocarbons, from

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binding to DNA in the cells (Teel). Another study found that ellagic acid blocked cancer initiation and suppressed tumour formation in mice exposed to carcinogens. The mice receiving ellagic acid had 44-75% fewer lung tumours than the control group.

As a normal part of aging, there is a decline in the immune system. An *in vivo* study at a Chinese university found that LBP restored normal immune function in aged mice. The researchers found that the mice receiving goji had increased antioxidant activity on four standard scales. Combining the polysaccharides with vitamin C, also present in goji berries, further enhanced its effectiveness (Li).

A placebo-controlled trial in humans found that goji juice boosted the immune system. In the study group of 60 adults aged 55-72, those receiving goji showed a significant increase in the number of lymphocytes and in the level of the immune system proteins interleukin-2 and immunoglobulin G. The group receiving the placebo showed no such increase. Those in the goji group also reported less fatigue, better sleep, and an improved feeling of well-being (Amagase).

Goji also has neuroprotective effects. It can lower the incidence of the plaques that cause Alzheimer's disease. Neurons are damaged when amyloid beta peptides trigger processes that form plaques. A study done in Hong Kong found that pre-treatment with goji extract inhibited these damaging processes even in the presence of the peptides, thereby protecting the neurons (Yu).

**PROTECTS VISION**

For centuries, the Chinese have valued goji berries for their ability to protect vision. They are high in zeaxanthin and lutein, two antioxidants that accumulate in the retina and prevent the free radical damage that leads to age-related macular degeneration (AMD). A study of over 4,500 humans found that a low dietary intake of zeaxanthin and lutein is strongly correlated with the incidence of AMD.

In a placebo-controlled, human intervention trial, goji berries were shown to markedly increase the levels of zeaxanthin and lutein in the bloodstream. After four weeks of dietary supplementation, the people receiving goji had two and a half times higher zeaxanthin levels (Cheng).

Goji has also been shown to reduce the loss of retinal nerve cells in glaucoma. Glaucoma is caused by elevated fluid pressure in the eye, which damages neural ganglion cells in the retina and leads to irreversible vision loss in the elderly. A study involving rats found that dietary supplementation with goji berry extract almost completely eliminated the loss of ganglion cells, even though the intraocular pressure remained elevated (Chan).

**SUPPORTS LIVER HEALTH**

In Traditional Chinese Medicine, goji berries are used to support the liver. A study of the biological activity of compounds derived from goji berries found that their ability to protect the liver is comparable to that of compounds found in milk thistle (Chin).

A study of human hepatoma cells *in vitro* found that LBP was able to inhibit the growth of the liver cancer cells and raise the concentration of calcium inside the cells. The goji extract triggered apoptosis, thereby inhibiting proliferation of the cancer cells.

When LBP was tested in mice performing strenuous exercise, it was found to enhance the storage of glycogen in the liver and muscles, leading to enhanced endurance and quicker recovery from fatigue (Luo).

**DOSAGE**

Take one capsule daily, preferably with a meal, or as directed by a health care practitioner.

**SAFETY**

Goji berries have been consumed as food and used in Traditional Chinese Medicine for thousands of years.

**Pregnancy and lactation:** Since concentrated goji has not been studied in pregnant and lactating women, do not use if you are pregnant or breastfeeding.

**Children:** Not recommended for children.

**Drug interactions:** None known.

**Contraindications:** Persons with coagulation disorders, or with allergies to plants in the nightshade family (Solanaceae), should consult their health care practitioner before consuming concentrated goji.

GojiRich contains concentrated antioxidant carotenoids, polyphenols, and polysaccharides, nutrients that promote

healthy aging by supporting the liver and eyes, and reducing the free radical damage that can lead to cancer, cardiovascular disease, and other degenerative conditions.

**KEY REFERENCES**

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