



ALPHA-LIPOIC ACID

400 mg

NPN 80030972

RESEARCH INFORMATION

Feature summary

Alpha-lipoic acid (ALA) is known as the universal antioxidant because it is both water- and fat-soluble, and protects the entire cell from oxidative damage. This includes protecting DNA in the mitochondria – the energy-producing powerhouses of every cell. ALA increases the body's total antioxidant capacity and levels of the key antioxidant glutathione, while recycling vitamins C and E. It protects against oxidative damage to muscles, nerves, and other tissues, and supports blood glucose (sugar) control and a normal inflammatory response.

In Germany, ALA is an approved treatment for diabetic neuropathy, a condition affecting 50% of people with diabetes. Free radical production is elevated in people with diabetes, but ALA protects the nerves and can improve diabetic neuropathy symptoms such as paresthesia (a tingling sensation), numbness, and weakness. ALA is also associated with enhanced energy metabolism and insulin sensitivity, and lower levels of fasting blood glucose and glycated hemoglobin, suggesting better long-term blood glucose management.

ALA's antioxidant activity protects the muscles during intense exercise, and supports healthy blood vessel function and circulation, which is especially important for people with diabetes.

Natural Factors Alpha-Lipoic Acid offers a convenient 400 mg one-a-day dose to support healthy blood glucose levels and enhance antioxidant protection for the maintenance of good health.

How it works

ALA is a cofactor for at least five enzyme systems in the human body and is very important for energy production within the mitochondria. This naturally occurring antioxidant is both water and fat soluble, meaning that it can protect the entire cell against oxidative damage. In addition to being an antioxidant, ALA also recycles antioxidants such as vitamins C and E, increases levels of the key antioxidant enzyme glutathione, and increases total antioxidant capacity. Antioxidants such as ALA help prevent free radical damage to the cells and tissues, thereby supporting the health of blood vessels, nerves, brain tissue, and muscles, including the heart. The production of reactive oxygen species like free radicals is higher in people with diabetes, even when the condition is well managed, putting them at risk for a vast array of diseases and conditions related to oxidative damage.

ALA appears to protect against diabetes-induced nerve damage, and helps enhance insulin sensitivity for better blood glucose control. It has also been seen to decrease monocyte chemoattractant protein-1 (MCP-1), a factor in the development of atherosclerosis, and to decrease inflammatory markers and pro-inflammatory substances such as nitric oxide, tumour necrosis factor-alpha, malondialdehyde, and matrix metalloproteinase 2.

Research

ALA has been called the “universal antioxidant” because it has an impressive ability to reduce free radicals, increase the expression of antioxidant enzymes, and recycle vitamins C and E. ALA has also demonstrated anti-inflammatory activity and neuroprotective effects (Moura et al., 2015).

A review of several trials found oral ALA supplementation especially beneficial for improving blood sugar control as well as protecting against nerve damage in patients with diabetes. These benefits are related to ALA’s ability to reduce oxidative damage, improve insulin sensitivity, and support proper function of the endothelium (the cells lining arterial walls) (Pagano et al., 2014). Furthermore, ALA supports nerve function in diabetics by improving nerve blood flow and nerve conduction velocity and is associated with improvements in neuropathic pain, paresthesia, numbness, sensory deficits, and muscle strength (Papanas et al., 2014).

In one randomized trial, 45 patients with type 2 diabetes and polyneuropathy received 600 mg of ALA three times a day for four weeks. Those who responded were then randomized to either receive 600 mg of ALA a day for 16 weeks, or withdraw. The group that continued to receive ALA saw their Total Symptom Score (TSS) drop from 8.9 to 3.46 in the first four weeks, and to 2.5 after 16 additional weeks. In contrast, the withdrawal group saw no further change in TSS and used higher levels of rescue pain medications than the ALA group (Garcia-Alcala et al., 2015).

ALA is essential for the activity of enzymes involved in mitochondrial energy metabolism, and supports the healthy breakdown of glucose into energy to fuel muscle activity. Clinical trials have found that ALA’s mitochondrial support can help reduce muscle fatigue and enhance energy levels, making it especially beneficial for people with diabetes, where the body cannot properly metabolize food into energy (Nicolson, 2014).

A 600 mg daily dose of ALA for 2–4 weeks has been associated with significant increases in glutathione levels and total antioxidant capacity, and reduced levels of damaging thiobarbituric acid reactive substances (Georgakouli et al., 2013). Another study found that adolescents with type 1 diabetes who took 300 mg of ALA twice daily for four months had significantly increased glutathione levels and enhanced heart function, suggesting ALA may help prevent diabetic cardiomyopathy (Hegazy et al., 2013). ALA also had a significant positive influence on several inflammatory markers, including decreased malondialdehyde, nitric oxide, tumour necrosis factor-alpha, and matrix metalloproteinase 2.

ALA can also help with weight loss. In one double-blind study ALA supplementation alone or in combination with eicosapentaenoic acid (EPA) from fish oil enhanced the effects of dieting (Huerta et al., 2015). At the end of 10 weeks, the control group had lost an average of 11.44 lbs; the EPA group 11.88 lbs; the ALA group 15.4 lbs; and the ALA+EPA group 14.3 lbs. Hence, ALA resulted in approximately three additional pounds of weight loss over the course of the 10 weeks.

Ingredients

Each capsule contains:

Alpha-lipoic acid400 mg

Dosage

Recommended adult dose: 1 capsule daily or as directed by a health care practitioner.

Cautions

Consult a health care practitioner prior to use if you are pregnant or breastfeeding, or if you have diabetes. Keep out of the reach of children.

References

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