

Blood Sugar, Cardiovascular, Cellular Immune
Support & Detox Support

Alpha-Lipoic Acid 600 mg

Description

Alpha-Lipoic Acid (ALA) is naturally produced by the human body, where it functions as a coenzyme in the Krebs cycle and may protect against cell damage in a variety of tissues. ALA is considered a “universal antioxidant” as it is unique in its ability to neutralize free radicals in both the aqueous and lipid cell regions. ALA has been shown to assist with the recycling of vitamin C and E, as well as some other antioxidants.* Additionally, it may contribute to enhancing the body's overall antioxidant status.* Beyond its direct free radical scavenging ability, ALA supports glutathione production, participates in glucose uptake and utilization – thereby assisting with healthy carbohydrate metabolism, helps to protect nerve tissues, and promotes healthy vascular function.* Standardized Grape Seed Extract and Bioperine® have been added to further support the product's antioxidant potential and increase its bioavailability.

Features & Benefits

- An essential component of energy metabolism.
- Universal antioxidant.
- Promotes healthy glucose metabolism, nerve and vascular function.*
- Supports glutathione production and normal detoxification mechanisms.

Suggested Usage

As a dietary supplement, take 1 Vcap® 1 to 2 times daily, preferably with meals, or as directed by your healthcare practitioner.

Allergen Checklist

Contains no sugar, salt, starch, yeast, wheat, gluten, corn, soy, milk, egg, shellfish or preservatives.



Technical Summary

Alpha Lipoic Acid (ALA) is a disulfide compound found naturally in mitochondria, where it functions as a coenzyme of the Krebs cycle and thus is involved in the production of cellular energy.^{1-4,20,24} Additionally, it helps to stimulate the production of glutathione (GSH),¹⁻⁴ which by itself possesses antioxidant activities and is a critical component in cellular and hepatic detoxification mechanisms.^{26,50} While ALA also contributes to hepatic detoxification processes,¹⁻⁴ its chief role as dietary supplement is most likely providing antioxidant protection.^{1-4,16} Due to its metabolic importance, ALA can be synthesized by both animals and humans.²⁵ As a molecule, a mountain of scientific evidence has confirmed ALA to be a potent antioxidant, which is capable to neutralize free radicals in both fat- and water-soluble mediums.^{1-4,16,28-45} ALA also appears to protect the body from the damaging effects of certain potentially hazardous chemicals, such as heavy metals, alcohol and mushroom poison.^{27,28,29,30,31,32} ALA has been used successfully for many conditions associated with impaired energy utilization, particularly abnormalities in carbohydrate metabolism,^{4-9,14,33} and associated neurodysfunction.^{8-10,34,35,36,37} Clinical research suggests that the consumption of ALA supplements may promote healthy blood sugar balance in lean and overweight subjects.^{7,14} Preliminary research also supports the efficacy of ALA supplementation for cardiovascular,^{9,11-13,17,38,39,40,41,42} and eye health.⁴³ Results from other studies indicate that ALA may also possess a positive effect on nerve,^{10,34-37} and cognitive function.^{16,44} Since the discovery of the “French Paradox”, Grape Seed Extract (GSE) has been added since it received much scientific attention; its antioxidant potential as part of the “French Paradox” discovery has been confirmed in numerous clinical studies (please, refer to reference [60] for a review). Bioperine®, an extract of the common pepper plant (piperine) has been added to provide increased bioavailability.

Mechanisms of Action

ALA functions as a coenzyme for the enzymes pyruvate dehydrogenase and alpha-ketoglutarate dehydrogenase and assists the electron transport chain (ETC) by passing along electrons, thus functioning as a potent antioxidant. Most note worthy its antioxidant activity extends to both the oxidized form (=ALA) and its reduced form dihydrolipoic acid (DHLA).⁴⁵ DHLA has been shown to participate in the regeneration of vitamin E via GSH, while regenerating ascorbic acid from dehydroascorbic acid at the same time (Fig.1).^{16,46}

(Continued On Page 2)

Mechanisms of Action (Continued)

Researchers have found supplemental ALA to increase levels of intracellular GSH,⁴⁷ coenzyme Q10,⁴⁸ vitamin C and E as well as concentrations of other antioxidative enzymes.^{49,50} Moreover, ALA seems to exert its antioxidative powers by chelating bivalent minerals, such as copper, manganese and zinc, therefore reducing their potential organ toxicity.^{52,53,54} By means of facilitating acyl-group transfer, ALA also assists with hepatic detoxification processes and the repair of damaged or faulty genetic material.^{55,56} ALA's ability to alleviate complications associated with compromised sugar disposal has been attributed to its antioxidative potential, in particular its ability to prevent protein glycosylation end products,⁵⁷ and through its inhibition of the enzyme aldose reductase; which subsequently interferes with the conversion of glucose and galactose to sorbitol.^{58,59} These studies suggested that the accumulation of sorbitol may play a role in the pathogenesis of various long-term complications associated with abnormalities in blood sugar regulation. GSE is rich in bioflavonoids, including catechins and oligomeric proanthocyanidins. Scientific studies have shown that the antioxidant power of proanthocyanidins is approximately 20 times greater than vitamin E and 50 times greater than vitamin C. Extensive research suggests that GSE might be beneficial in many areas of health because of its antioxidant effect, its ability to bond with collagen, as well as supporting cell and tissue health.⁶⁰

Clinical Applications

The primary application for oral ALA is to promote health and well being among patients with increased oxidative stress, especially those with abnormalities in blood sugar regulation.^{1-14,33-42} Emerging science also suggests that its ingestion might be of value to promote cognitive and visual health.^{16,43,44} Due to its metabolic importance for hepatic detoxification processes, those desiring liver support and cleansing may benefit from ALA supplements.^{55,56} Additionally, athletes may value ALA for its involvement in the oxidation reactions of pyruvic acid (as pyruvate), alpha-ketoglutarate and branch-chain amino acids (leucine, isoleucine and valine).⁵⁵

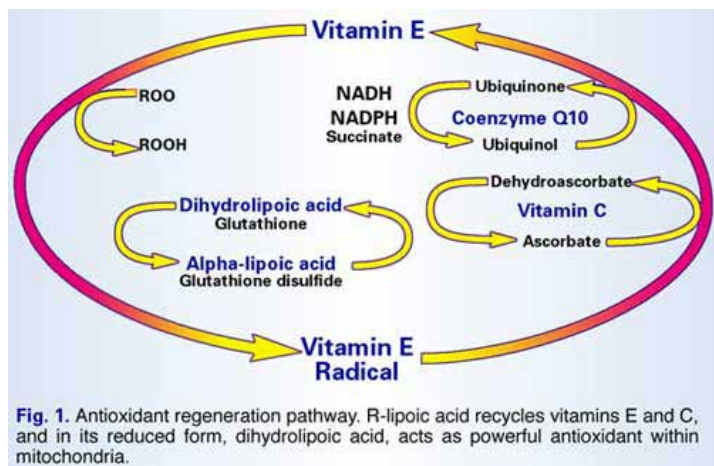


Fig. 1. Antioxidant regeneration pathway. R-lipoic acid recycles vitamins E and C, and in its reduced form, dihydroliipoic acid, acts as powerful antioxidant within mitochondria.

P3046

Supplement Facts		
Serving Size 1 Vcap®		
	Amount Per Serving	% Daily Value
Alpha-Lipoic Acid	600 mg	†
Grape Seed (<i>Vitis vinifera</i>) Standardized Extract (min. 90% Polyphenols)	30 mg	†
Bioperine®	5 mg	†

† Daily Value not established.
Other ingredients: Cellulose (capsule), Cellulose, Silica and Magnesium Stearate (vegetable source).

Manufactured by NHG, P.O. Box 2203, Sparks, NV 89431, U.S.A.
Contains no sugar, salt, starch, yeast, wheat, gluten, corn, soy, milk, egg, shellfish or preservatives. **Vegetarian/Vegan Formula.**
Processed to naturally yield a 50% R-ALA isomeric product.
Bioperine® is a registered trademark of Sabinsa Corporation.
Vcap® is a registered trademark of Capsugel.
This bottle contains an Ageless® oxygen absorbing packet to ensure freshness. Do not eat Packet. Store in a cool, dry place. Please Recycle.

Cautions/ Interactions

Oral supplementation with ALA may lower blood sugar levels; hence, caution is advised when using medications that may also lower blood sugar, such as anti-diabetes drugs.^{5-8,14} ALA may alter thyroid hormone levels;¹⁵ hence, patients diagnosed with a thyroid condition should consult with a qualified healthcare practitioner before using this product. Due to its participation in hepatic detoxification reactions, ALA may influence biotransformation of certain xenobiotics; while no case reports have been published thus far, ALA may theoretically adversely interact with certain cancer treatments, antibiotics, certain anti-osteoporosis medications, and vasodilators. Concomitant use of ALA with valproate may lead to reduced drug bioavailability; hence, patients taking valproate should consult with their physician prior to taking ALA.¹⁸ Patients with thiamine-depleting conditions such as alcoholism may benefit from B1-supplementation concurrently with ALA.¹⁶ On the other hand, preclinical studies suggest that concomitant use of ALA supplements with certain chemotherapy agents may alleviate the drug's respective organ toxicity.¹⁹⁻²³

Complementary Products

CoQ10 (P3208), Glucose Balance™ (P3318), Liver Detox™ (P2448), Omega-3 (P1656), Ortho-E™ (P0950), ProtoSorb™ C (P0716), Resveratrol (P3353), True Balance™ Multi-Vitamin. (P3380)

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