



GENESTRA
BRANDS®

Lipoic Acid

Unique water- and lipid-soluble antioxidant

- Provides antioxidants for the maintenance of good health
- Offers 400 mg of lipoic acid per daily dose
- Ideal for vegans
- **Improved formula**
 - Includes a higher amount of lipoic acid per capsule (400 mg compared to 100 mg)
 - Free from magnesium stearate

Lipoic acid is a unique water- and fat-soluble antioxidant that helps to maintain good health.¹ In both its oxidized and reduced forms, lipoic acid can scavenge free radicals, regenerate endogenous antioxidants (such as glutathione and vitamins C and E), and bind metal ions to reduce metal-induced oxidative damage.¹ Because it supports antioxidant defence in nearly every part of the cell using a variety of actions, it is known as the “universal antioxidant.”^{1,2} As the typical Western diet provides low amounts of lipoic acid and humans produce this compound in low levels, daily supplementation is an ideal way of increasing the intake of this valuable antioxidant.¹



EACH CAPSULE CONTAINS:

DL-Alpha-Lipoic Acid 400 mg

Non-Medicinal Ingredients: Hypromellose, ascorbyl palmitate, cellulose

Recommended Dose

Adults: Take 1 capsule daily or as recommended by your healthcare practitioner.

Product Size
60 Vegetarian Capsules

Product Code
10534A

NPN 8008603



Non
GMO



Gluten
Free



Vegan

REFERENCES

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2. El Barky, AR, Hussein, SA, Mohamed, TM. Plant Chem and Ecophysiol. 2017; 2(1): 1016.

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Lipoic Acid

Scientific Rationale:

Lipoic acid, also known as thioctic acid, is a naturally occurring short-chain fatty acid.^{1,2} It is primarily recognized for its effective antioxidant activities.³ Lipoic acid provides particular support to the mitochondria of cells, a key source of free radicals formed during energy production.^{2,4}

Free radicals may be generated by environmental sources (such as heavy metals, drugs or ultraviolet rays) or formed during normal metabolic reactions, playing important roles in cell processes.^{5,6} Under normal conditions, antioxidant protection balances free radical production; however, increases in free radical formation or reduced antioxidant activity can result in oxidative stress.⁵ In turn, this can damage lipids, protein and DNA, impairing cell membrane integrity and normal cell function.⁵ Although the body naturally defends against oxidative stress, these processes can become overwhelmed.⁷ In addition, the body's ability to protect against and repair damage due to oxidative stress decreases over time.⁸ As such, older individuals may experience particular benefits from increasing their antioxidant intake.^{7,8}

Lipoic acid is unique among antioxidants as it is both water- and fat-soluble.³ As it easily crosses biological membranes, it is able to exert its actions in nearly every part of the cell, including the cytosol and plasma membrane.³ Lipoic acid has also been reported to cross the blood-brain barrier.¹ In contrast, vitamins C and E are typically either water- or lipid-soluble, respectively.³

Research has reported that lipoic acid functions as an antioxidant in a number of ways: scavenging free radicals, regenerating endogenous antioxidants, and reducing metal-induced oxidative damage.³ In either its oxidized or reduced form (known as dihydro-lipoic acid or DHLA), lipoic acid

can directly scavenge various reactive oxygen species, including hydroxyl radicals, hypochlorous acid and singlet oxygen.³ By recycling other antioxidants, including vitamins C and E, glutathione, and coenzyme Q₁₀, lipoic acid helps to maintain their activity.³ Additionally, preclinical research has reported that lipoic acid binds metal ions, such as copper, zinc and lead, to reduce their involvement in the generation of free radicals.^{3,4} Due to its ability to support antioxidant defence in many ways throughout the body, lipoic acid has been termed the “universal antioxidant.”²

One controlled study evaluated the antioxidant effects of lipoic acid in adults.⁹ Researchers reported that individuals receiving 600 mg of lipoic acid daily for at least three months had significantly lower levels of lipid peroxidation, as measured by plasma lipid hydroperoxides (ROOH), representing a reduction in oxidative stress.⁹ Additionally, a ratio involving ROOH and α -tocopherol significantly improved, suggesting that lipoic acid also promoted a healthy balance between antioxidant defence and oxidative stress.⁹

Although lipoic acid can be endogenously produced from a reaction involving fatty acids and cysteine, humans generate it only in low levels; therefore, it must be obtained from dietary sources.³ Lipoic acid is primarily found in animal products, such as muscle, heart, liver and kidney, but is also present in lower amounts in fruits and vegetables, including spinach, broccoli, Brussels sprouts and tomatoes.^{3,4} Still, as research suggests that Western diets do not typically provide significant levels of lipoic acid, supplements may effectively increase its intake and support antioxidant defence.³

REFERENCES

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2. El Barky, AR, Hussein, SA, Mohamed, TM. *Plant Chem and Ecophysiol*. 2017; 2(1): 1016.
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