

LIPOSOMAL



EDTA WITH R-LIPOIC ACID

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Liposomal EDTA with R-Lipoic Acid is a highly absorbable form of the universal chelating agent, ethylenediaminetetraacetic acid (EDTA), delivered together with R-lipoic acid, which is noted for its antioxidant, detoxification, and metal-binding properties. This highly bioavailable liposomal blend is designed to bind a wide range of harmful metals and offer balanced redox actions.

EDUCATION

METAL BINDING

Calcium disodium ethylenediaminetetraacetic acid (EDTA) is the most commonly used chelating agent in the world. It binds to a variety of toxic metals, including lead and cadmium.^{1,2} Heavy metals can penetrate biomembranes and sequester inside cells, tissue and bone.^{3,4,5} In order to effectively chelate these metals, chelating agents must be able to penetrate biomembranes and get into the cell.

R-lipoic acid can also bind to a variety of metals including cadmium, lead, cobalt, nickel, and mercury.^{6,7,8} This most active isomer of alpha lipoic acid, R-lipoic acid also functions as a mitochondrial antioxidant, supporting glutathione, ubiquinol, vitamin C and E.^{9,10}

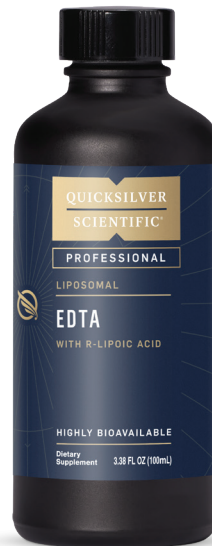
ANTIOXIDANT DEFENSES

Both EDTA and R-lipoic acid reduce oxidative stress and injury, and increase antioxidant activity. By chelating toxic metals that are responsible for cell membrane injury, EDTA reduces oxidative stress and inflammation.¹¹ EDTA has shown direct antioxidant activity in blood vessel walls and has decreased DNA damage and plasma peroxide levels by 20%.¹²

Lipoic acid is a powerful mitochondrial antioxidant that plays a critical role in mitochondrial energy metabolism. Both fat and water soluble, it is able to neutralize reactive oxygen species (ROS) both inside and outside of cells.¹³ Lipoic acid is associated with elevated cell resistance to oxidative challenge and has shown to be particularly effective in offsetting free radical peroxidation of membrane phospholipids.^{13,14} Lipoic acid has also been shown to regulate the transcription of genes associated with antioxidant and anti-inflammatory pathways, including the potent master antioxidant switch, Nrf2.¹⁴

CARDIOPROTECTIVE, NEUROPROTECTIVE AND TISSUE PROTECTIVE PROPERTIES

Lipoic acid can cross the blood-brain barrier, where it may benefit the central nervous system. It has been shown to increase the antioxidant capacity of brain tissue, promote angiogenesis - the growth of blood vessels from the existing vasculature, and regulate activity of genes linked to cell survival and plasticity.¹⁵



Supplement Facts

Serving Size: 5 mL (1 tsp.)
Servings Per Container: 20

	Amount Per Serving	% Daily Value
Sodium	35mg	1.5%
EDTA (Disodium EDTA)	210mg	**
Lipoic Acid (from Sodium R-Lipoate)	26mg	**
Phosphatidylcholine (from purified soybean lecithin)	350mg	**

**Daily Value not established

Other Ingredients: Glycerin, ethanol, water, sodium hydroxide

EDTA has been shown to improve arteriosclerosis and reduce risk of cardiovascular events.^{16,17} EDTA has also been shown to slow the progression of diabetic nephropathy and improve symptoms in those with multiple sclerosis.^{18,19}

ANTI-INFLAMMATORY AND IMMUNE MODULATING ACTION

Lipoic acid has been shown to downregulate levels of inflammatory cytokines such as IL-1B and IL-6, as well as interferon gamma, IL-4, TGF beta and other cytokines.^{20,21}

BIOAVAILABILITY

Liposomal forms of EDTA have been shown to offer superior bioavailability compared to oral or intravenous delivery methods.²²

Lipoic acid is lipophilic and is able to penetrate cell membranes. However, R-lipoic acid is significantly better absorbed than the S-form, with peak plasma concentrations 40%-50% higher.²³ Liposomal formulations of lipoic acid outperform other oral forms, allowing slow, sustained release.²⁴

Quicksilver Delivery Systems® improve upon liposomal and emulsification technology with smaller, more stable particles made from the highest-grade ingredients available. In addition to exceptional absorption rates, these tiny liposomal and nanoemulsified particles increase diffusion across mucus membranes, enhance lymphatic circulation of nutrients and support cellular delivery.