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.

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

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]

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.

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References available at https://www.quicksilverscientific.com/pages/references/edta-references