

DR SHADE'S



THE ONE

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Dr. Shade's The One is a liposomal blend of nutraceuticals and botanicals designed to support healthy mitochondrial function, metabolism, and stress resistance. Our unique formulation includes Pyrroloquinoline Quinone (PQQ), resveratrol, CoQ10 as ubiquinone, DeltaGold® Tocotrienols, and thirteen time-honored adaptogenic botanicals.



Supplement Facts

Serving Size: 5 mL (1 tsp.) Servings Per Container: 20	Amount Per Serving	% Daily Value
BioPQQ® (Pyrroloquinoline Quinone Disodium Salt)	7mg	**
CoQ10 (as Ubiquinone)	30mg	**
Resveratrol (from Japanese Knotweed root extract)	15mg	**
DeltaGOLD® Tocotrienols	5mg	**
Phosphatidylcholine (from purified sunflower seed and soybean lecithin)	250mg	**
Sun Horse Proprietary Liquid Adaptogenic Herbal Blend	400mg	**
Acai Berry, Gynostemma rhizome (Jiaogulan), Goji berry, Maca root, American Ginseng root, Schisandra fruit, Chinese Licorice root, Rhodiola root, Astragalus root, Reishi fruiting body, Catuaba Bark, Guarana seed, Ashwagandha root, Maple sap Syrup		
**Daily Value not established		
Other Ingredients: Water, glycerin, ethanol, tocopherolan, medium chain triglycerides, natural citrus oils, sucrose esters of fatty acids, natural mixed tocopherols, natural flavorings		

EDUCATION

AN INTRODUCTION TO MITOCHONDRIAL METABOLISM

Every cellular process in our bodies links back to our mitochondria, our precious renewable biological batteries.¹ These tiny, critical organelles are intimately involved in energy production, hormone production, blood clotting, muscle contraction, cell life and cell death.² As many as a thousand mitochondria populate each cell in our body, continuously converting dietary calories into useable energy in the form of ATP (adenosine triphosphate). ATP is so important that the human body recycles it 1000 to 1500 times a day. Mitochondria also help regulate cellular proliferation, cellular differentiation, cell death (apoptosis), and the removal and recycling of damaged cells and organelles (autophagy and mitophagy).³

With such an enormous rate of energy production, mitochondria are vulnerable to damage. Through a process known as oxidative phosphorylation, they synthesize ATP but also generate high numbers of reactive oxygen species (ROS). These ROS serve as signaling molecules that regulate cellular function, but also can cause damage to our DNA.⁴ This leads to an extraordinarily high mutation rate in comparison to the nucleus of the cell.⁵

Mitochondria continuously divide over the course of our lifetime, producing fresh mitochondria through biogenesis. Mitochondrial biogenesis is highly responsive to both energy demand and environmental stimuli.⁶ In addition, as generators of cellular energy, mitochondria serve as first responders to environmental change and stress, and are vulnerable to environmental toxins and pollutants.⁷ Supporting mitochondria with innovative nutraceutical combinations may enhance and contribute to their efficient function and biogenesis, and induce cytoprotective pathways that can optimize health and preserve youthful, resilient metabolism.

PQQ ENHANCES MITOCHONDRIAL BIOGENESIS & OFFERS NEUROPROTECTION

Pyrroloquinoline quinone (PQQ) is an antioxidant nutrient with a proven ability to enhance mitochondrial biogenesis and metabolism through multiple pathways and transcription factors.^{8, 9, 10} PQQ stimulates expression of a master regulator molecule called PGC-1α (peroxisome proliferator-activated receptor gamma coactivator 1-alpha). PGC-1α then activates genes that promote mitochondrial activity and upregulate cellular metabolism, as well as help regulate blood pressure, cholesterol, triglycerides, and energy metabolism.¹¹

PQQ enhances mitochondrial reproduction, protection, and repair. Dietary sources of PQQ modulate mitochondrial quantity and function, and everything from lipid metabolism to cardiac ischemia.¹² In animal studies, deficiency of dietary PQQ leads to stunted growth, reduced fertility and fewer mitochondria. Reintroducing PQQ to the diet increases the number of mitochondria as well as their metabolic efficiency.^{13, 14} PQQ has exceptional redox recycling capacity and thus profound neuroprotective and neuroregenerative properties.¹⁵ PQQ induces Nrf2, our endogenous master antioxidant switch, which upregulates numerous genes involved in detoxification.¹⁶ The muscle richest in mitochondria is the heart, and PQQ protects it against muscle dysfunction and reduces lipid peroxidation.^{17, 18}

UBIQUINONE (COQ10) OPTIMIZES MITOCHONDRIAL FUNCTION

Ubiquinone, the potent lipid antioxidant Coenzyme Q10, supports the ability of mitochondria to produce energy. An astonishing 95% of all cellular energy is dependent upon CoQ10.¹⁹ CoQ10 facilitates the transfer of electrons (energy) into ATP in the mitochondria. In fact, when CoQ10 has been added to aging mitochondria, their function improved markedly.²⁰ For example, CoQ10 has been shown to positively impact mitochondria function supporting age-related decline in female fertility and in the brain as it relates to aging and/or neurodegenerative conditions.^{21, 22} Studies with the most famous “worm” in science—the incredibly tiny *C. elegans* that has a complete nervous system—show that CoQ10 can slow down aging and extend lifespan.²³ The highest CoQ10 concentrations are found in our most energy-intensive organs: the brain, heart, liver, and kidneys.²⁴

RESVERATROL SLOWS AGING AND CLEARS DAMAGED MITOCHONDRIA

Mitochondrial dysfunction is a key biomarker of aging.²⁵ Resveratrol is an antioxidant polyphenol exhibiting a unique range of anti-aging properties. Resveratrol activates the so-called “longevity” enzymes, the sirtuins, mimicking the beneficial effects of calorie restriction.²⁶ Like PQQ, resveratrol can stimulate mitochondrial biogenesis and promote mitochondrial respiration, while decreasing ROS and inflammation.^{27, 28}

It increases nitric oxide production and benefits the heart, inhibits inflammatory cyclooxygenase, and may help break down beta-amyloid plaque.²⁹ It increases the activity of the antioxidant enzymes glutathione-peroxidase, S-transferase and S-reductase, superoxide dismutase, and catalase.³⁰ Resveratrol has been shown to improve mitochondrial function in liver and skeletal muscle cells, as well as induce the formation of new mitochondria in endothelial cells.³¹

Resveratrol also has been shown to help stimulate mitochondrial biogenesis, an effect that is further enhanced when combined with exercise.³² Finally, resveratrol induces both autophagy and mitophagy, helping the body clear damaged cells and thereby reducing inflammation and protecting against oxidative damage.³³

TOCOTRIENOLS INCREASE ANTIOXIDANT ACTION

Tocotrienols are part of the vitamin E family and are well distributed in the lipid layers of the cell membrane. They offer unique antioxidant, neuroprotective, cholesterol-lowering and anti-inflammatory action.^{34, 35} Tocotrienols stimulate our master antioxidant switch, Nrf2.³⁶ Delta and gamma tocotrienols sourced from annatto have been shown to lower total cholesterol, LDL, triglycerides and cytokines associated with cardiovascular disease.³⁷ They also effectively lower nitric oxide⁴⁰ and offer more antioxidant action than alpha tocopherol or a mix of tocopherols and tocotrienols.³⁸

GLOBAL ADAPTOGENS ENHANCE STRESS RESISTANCE

Adaptogenic herbs have a long and celebrated reputation for supporting the body's response to conditions of high demand.³⁹ For example, American Ginseng Root (*Panax quinquefolius*) supports mental acuity and memory, and protects neurons from overactivity and toxicity.⁴⁰ Acai berry offers antioxidant and anti-inflammatory action.^{41, 42} Himalayan Goji Berry (*Lycium barbarum*)—the “longevity” berry offers anti-aging, neuroprotective, and antioxidant benefits, and supports a balanced immune response.⁴³

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.

References available at <https://www.quicksilverscientific.com/pages/references/the-one-references>

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WARNING: NOT FOR USE BY INDIVIDUALS UNDER THE AGE OF 18 YEARS. DO NOT USE IF PREGNANT, BREAST-FEEDING, OR PLANNING TO BECOME PREGNANT. KEEP OUT OF REACH OF CHILDREN. Consult a healthcare professional before use if you have any medical condition or are taking any other supplements or medications. Do not exceed recommended dosage. See www.quicksilverscientific.com for additional safety information.

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