



The One



Supplement Facts		
Serving Size: 5 mL (1 tsp.) Servings Per Container: 20	Amount Per Serving	% Daily Value
BioPQQ <sup>®</sup> (Pyrroloquinoline Quinone Disodium Salt)	7mg	**
CoQ10 (as Ubiquinone)	30mg	**
Resveratrol (from Japanese Knotweed root extract)	15mg	**
DeltaGOLD <sup>®</sup> Tocotrienols	5mg	**
Essential Phospholipids (from purified sunflower seed and soybean lecithin)	350mg	**
SunHorse Proprietary Adaptogenic Liquid Herbal Blend	400mg	**
<small>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</small>		
**Daily Value not established		
<b>Other Ingredients:</b> Water, glycerin, ethanol, vitamin E (as tocopherols and natural mixed tocopherols), medium chain triglycerides, and natural citrus oils		

The One is an innovative blend of designer nutraceuticals that optimize mitochondrial function, increase metabolic efficiency and enhance resistance to stress. Mitochondria are our precious renewable biological batteries, producing the energy that powers every cell in our body.<sup>1</sup> Mitochondrial dysfunction is a key biomarker of aging.<sup>2</sup> Breakthrough research has revealed that a select group of exceptional molecules can dramatically affect mitochondrial energy-producing capacity. These include pyrroloquinoline quinone (PQQ)<sup>3</sup>, ubiquinone (CoQ10)<sup>4</sup>, delta tocotrienol<sup>5</sup> and resveratrol.<sup>6</sup> These pure molecules are set in a matrix of thirteen globally sourced adaptogenic herbs that activate multiple pathways upregulating resistance to stress.<sup>7</sup> The result is increased mitochondrial biogenesis, improved fatty acid oxidation, cleaner glucose utilization, and a more streamlined, efficient metabolism that mimics the beneficial longevity effects of calorie restriction.<sup>8,9,10,11</sup> The nutrients are packaged in our advanced nano-liposomal delivery system for rapid uptake and delivery to the cells where they are needed most.

### AN INTRODUCTION TO MITOCHONDRIAL METABOLISM

Every cellular process in our bodies links back to mitochondria. These tiny, critical organelles are intimately involved in energy production, hormone production, blood clotting, muscle contraction, cell life and cell death.<sup>12</sup> 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).<sup>13</sup>

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.<sup>14</sup> This leads to an extraordinarily high mutation rate in comparison to the nucleus of the cell.<sup>15</sup>

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.<sup>16</sup> 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.<sup>17</sup> 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.

### ENHANCE MITOCHONDRIAL BIOGENESIS WITH PQQ, A NEUROPROTECTIVE ANTIOXIDANT

Pyrroloquinoline quinone (PQQ) is an antioxidant nutrient with a proven ability to enhance mitochondrial biogenesis and metabolism through multiple pathways and transcription factors.<sup>18,19</sup> 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.<sup>20</sup>

PQQ enhances mitochondrial reproduction, protection, and repair. Dietary sources of PQQ modulate mitochondrial quantity and function,

### BENEFITS & APPLICATIONS:

#### PQQ

- Stimulates mitochondrial biogenesis<sup>18,19</sup>
- Improves mitochondrial metabolism<sup>20</sup>
- Promotes mitochondrial repair<sup>20,21</sup>
- Helps regulate blood pressure, cholesterol, triglycerides<sup>20</sup>
- Neuroprotective and neuroregenerative<sup>24</sup>
- Induces Nrf2<sup>25</sup>
- Reduces lipid peroxidation<sup>26,27</sup>

#### Ubiquinone

- Improves mitochondrial metabolism<sup>29</sup>
- Increases mitochondrial ATP<sup>28,30,31</sup>
- Anti-aging<sup>30,31,32</sup>
- Cardioprotective<sup>30</sup>

#### Resveratrol

- Anti-aging<sup>33</sup>
- Stimulates mitochondrial biogenesis<sup>34,38,39</sup>
- Promotes mitochondrial respiration<sup>35</sup>
- Induces autophagy and mitophagy<sup>40</sup>
- Anti-inflammatory<sup>35</sup>

#### Delta Gold<sup>®</sup> Tocotrienol

- Anti-inflammatory and neuroprotective<sup>44</sup>
- Powerful antioxidant<sup>41</sup>
- Induces Nrf2<sup>42</sup>
- Lowers cholesterol, triglycerides and inflammatory cytokines<sup>45</sup>

#### Adaptogenic Herbal Blend

- Increases resistance to stress<sup>46</sup>
- Supports adrenal function<sup>46</sup>
- Supports healthy blood flow, blood sugar metabolism, circulation, energy, endurance and healthy mood<sup>47, 48, 49, 50, 51,52, 53</sup>

and everything from lipid metabolism to cardiac ischemia.<sup>21</sup> 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.<sup>22,23</sup> PQQ has exceptional redox recycling capacity, thus profound neuroprotective and neuroregenerative properties.<sup>24</sup> PQQ induces Nrf2, our endogenous master antioxidant switch, which upregulates numerous genes involved in detoxification.<sup>25</sup> The muscle richest in mitochondria is the heart, and PQQ protects it against muscle dysfunction and reduces lipid peroxidation.<sup>26,27</sup>

### **OPTIMIZE MITOCHONDRIAL FUNCTION WITH UBIQUINONE (COQ10)**

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.<sup>28</sup> 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.<sup>29</sup> The age-related decline in female fertility is thought to be due in part to mitochondrial dysfunction, which CoQ10 supplementation has been shown to reverse.<sup>30</sup> Dysfunction of mitochondria in the brain, related to aging or neurodegenerative conditions, has been improved with CoQ10.<sup>31</sup> A two year study found that heart failure patients supplemented with CoQ10 in addition to standard therapy showed a 44% reduction in cardiovascular mortality compared to those receiving standard therapy and a placebo. Even more astonishing, those receiving CoQ10 had a 42% reduction in all-cause mortality.<sup>32</sup> 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.<sup>33</sup> The highest CoQ10 concentrations are found in our most energy-intensive organs: the brain, heart, liver, and kidneys.<sup>34</sup>

### **SLOW AGING AND CLEAR DAMAGED MITOCHONDRIA WITH RESVERATROL**

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.<sup>35</sup> Like PQQ, resveratrol can stimulate mitochondrial biogenesis<sup>36</sup> and promote mitochondrial respiration, while decreasing ROS and inflammation.<sup>37</sup> It increases nitric oxide production and benefits the heart, inhibits inflammatory cyclooxygenase, and may help break down beta-amyloid plaque.<sup>38</sup> It increases the activity of the antioxidant enzymes glutathione-peroxidase, S-transferase and S-reductase, superoxide dismutase, and catalase.<sup>39</sup> 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.<sup>40</sup> Treatment with resveratrol helps stimulate mitochondrial biogenesis, an effect that is further enhanced when combined with exercise.<sup>41</sup> Finally, resveratrol induces both autophagy and mitophagy, helping the body clear damaged cells and thereby reducing inflammation and protecting against oxidative damage.<sup>42</sup>

### **INCREASE ANTIOXIDANT ACTION WITH DELTA GOLD® TOCOTRIENOL**

DeltaGold® Tocotrienol is comprised of both delta and gamma tocotrienols naturally sourced from annatto. Tocotrienols, part of the vitamin E family, are well distributed in the lipid layers of the cell membrane and offer unique antioxidant, neuroprotective, cholesterol-lowering and anti-inflammatory action.<sup>43</sup> Tocotrienols stimulate our master antioxidant switch, Nrf2.<sup>44</sup> Delta and gamma tocotrienols sourced from annatto have been shown to lower total cholesterol, LDL, triglycerides and cytokines associated with cardiovascular disease.<sup>45</sup> It also effectively lowers nitric oxide<sup>46</sup> and offers more antioxidant action than alpha tocopherol or a mix of tocopherols and tocotrienols.<sup>47</sup>

### **ENHANCE RESISTANCE TO STRESS WITH GLOBAL ADAPTOGENS**

Adaptogenic herbs have a long and celebrated reputation for supporting the body’s response to conditions of high demand.<sup>48</sup> Adaptogens support key organ systems, blood flow, blood sugar metabolism, circulation, energy, endurance and healthy mood. Here we utilize our adaptogenic blend, Ultra Energy®, a global resonance formula blending synergistic adaptogens sourced from around the globe and developed by master herbalist Dan Moriarty of Sun Horse Energy. The formula includes Gynostemma (southern ginseng, also known as the immortality herb)<sup>49,50,51</sup>; American Ginseng Root (*Panax quinquefolius*) which supports mental acuity and memory, and protects neurons from overactivity and toxicity<sup>52</sup>; acai berry, which offers antioxidant and anti-inflammatory action<sup>53,54</sup>; Himalayan Goji Berry (*Lycium barbarum*)—the “longevity” berry that is anti-aging, neuroprotective, antioxidant, and supports a balanced immune response<sup>55</sup>; and many more.

### **LIPOSOMES OFFER SUPERIOR BIOAVAILABILITY**

If you’re only going to take one supplement, let it be The One—a one-of-a-kind mitochondrial optimizer to enhance longevity, healthy metabolism, and resistance to stress. Rapid action is a hallmark of our Quicksilver Delivery Systems®, which improve upon liposomal and emulsification technology with smaller, more stable particles made from the highest-grade ingredients available. These particles offer exceptional absorption rates, allowing rapid uptake of energy-generating molecules to truly support optimal mitochondrial metabolism.

Quicksilver Delivery Systems® brings the power of intravenous therapy into convenient oral delivery. Our 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.<sup>28,29</sup>

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