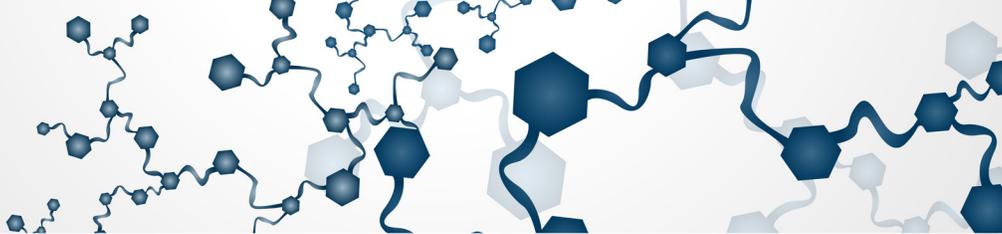
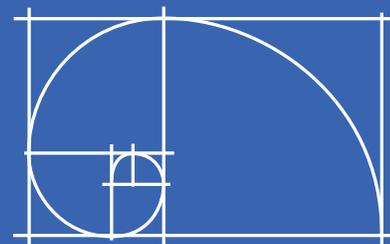


# UltraPQQ™

## Pyrroloquinoline Quinone



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## What is PQQ?:

PQQ (also known as pyrroloquinoline quinone) is a small quinone, water-soluble/vitamin-like compound with important antioxidant effects. It functions by promoting the creation of new mitochondria, which supports heart health and cognitive functions. PQQ is designed to aid in optimal mitochondrial biogenesis, which is critical for the promotion of healthy aging, optimal energy production, and protection from reactive oxygen species (oxidative stress).

## About Ultra PQQ™:

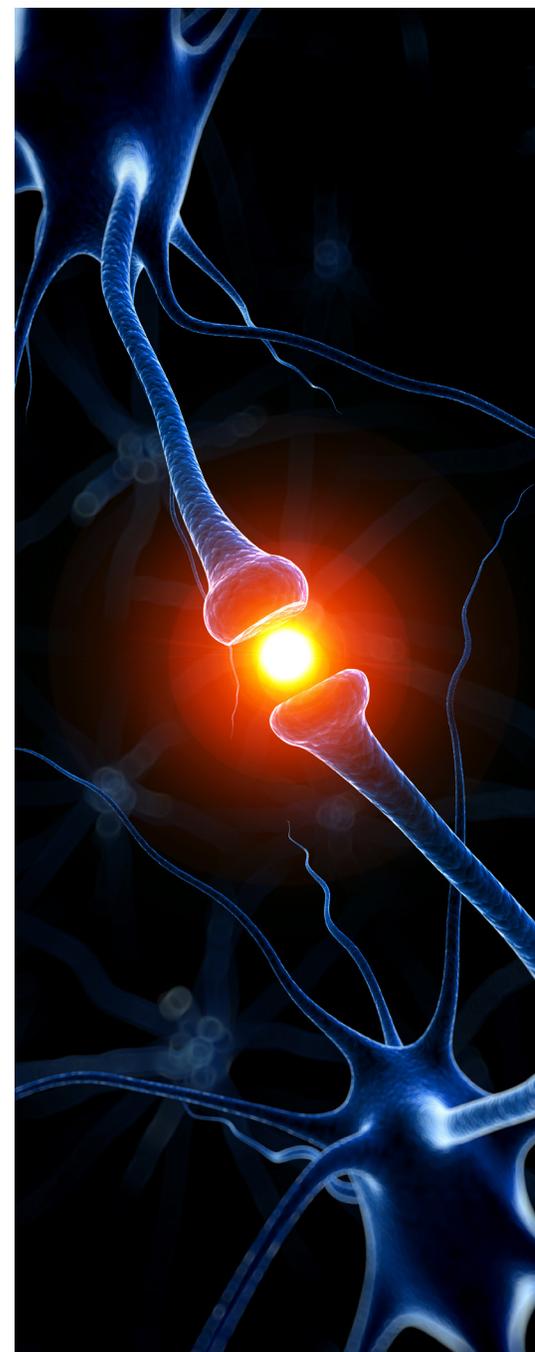
Ultra PQQ™ features pure pyrroloquinoline quinone (PQQ), a water-soluble, vitamin-like compound. PQQ is an enzyme cofactor possessing antioxidative, neuroprotective, and cardioprotective properties. Research shows that PQQ enhances energy production through encouraging mitochondrial biogenesis and helps defend against free radicals in the nervous system as well as the mitochondria.

## Benefits of PQQ:

### Increased Energy

PQQ is a key regulator of cellular function and is involved in biochemical signal transductions involved in cellular growth, development, differentiation and survival. Supplementation with PQQ can promote Mitochondrial Biogenesis, the creation of new mitochondria. New mitochondria mean more potential energy. This is a revolutionary compound with large implications in expanding energy capacity in the heart and brain, where the highest amount of mitochondria resides.

PQQ helps promote the mitochondria to function properly, which generates over 92% of our bodies energy use for daily functions. Studies in animal models showed that the usage of PQQ as a single agent remarkably improved mitochondrial respiratory ratios in ischemic conditions. (*Zhu, B et al. Journal of Cardiovascular Pharmacology and Therapeutics. 2006*). Consistently, a study was conducted in human cells showed that direct PQQ administration resulted in increased mitochondrial production.



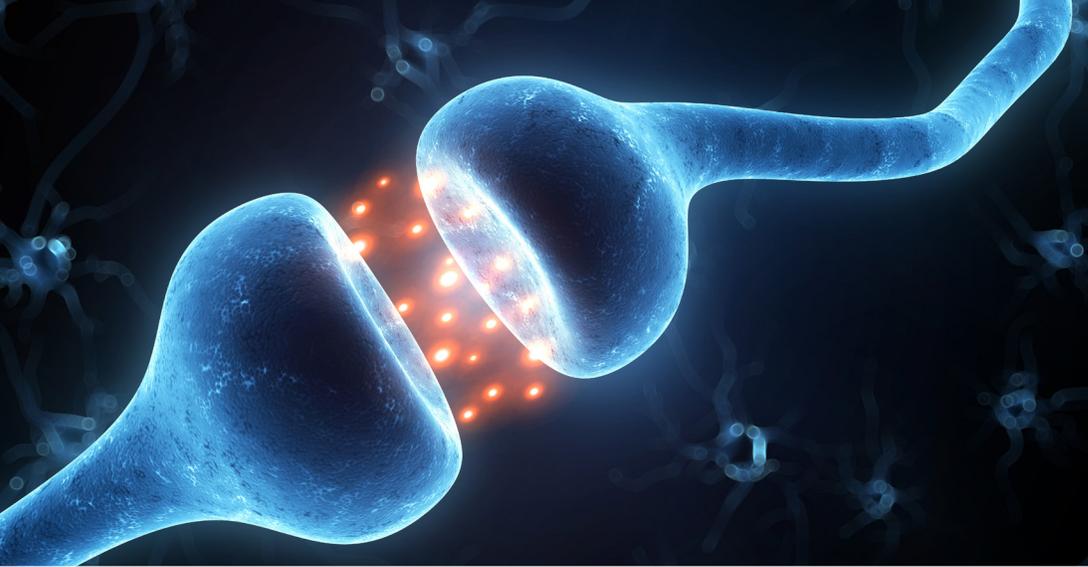
\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

[www.vestaingredients.com](http://www.vestaingredients.com)

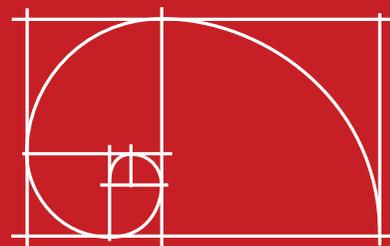


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The scientists leading this study noted that PQQ holds great promise, "PQQ would appear to have therapeutic potential similar to resveratrol, genistein, hydroxytyrosol, quercetin, or other compounds that can induce mitochondrial biogenesis." (Chowanadisa, W. et al. *Journal of Biological Chemistry*. 2010)

### Nerve Growth Factor

Nerve growth factor (NGF) is a naturally occurring neuropeptide that functions in regulating nerve growth and function by encouraging survival signaling in neurons. PQQ is one-of-a-kind in cognitive brain health for its connection to nerve growth by increasing NGF production. A study was conducted in sciatic-nerve-deficit animal model in which PQQ was shown to improve induction of nerve cells. (Nunome, K. et al. *Biological and Pharmaceutical Bulletin*. 2008)

### Antioxidant for Protection

Antioxidants are important factors in the body to protect from damage on the cellular level. Oxidative stress is caused by cumulative damage done by free radicals. The brain is more susceptible to this damage since the antioxidants that neutralize the free radicals have reduced levels in the brain. PQQ is the leader among antioxidants. Since this molecule is extremely potent with a significantly longer half-life, PQQ will last longer within the body and protect cells more efficiently, more than any other antioxidants. Studies conducted with primary, patient neurons have shown that PQQ significantly reduced oxidation status and had a neuroprotective effect. The researchers concluded that PQQ effectively reduced oxidative stresses and free radicals leading to the prevention of neuronal cell death.



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at Competitive Prices.™



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### Product Specification:

**Recommended dosage:** 10-20 mg

**Pack size:** 1 kg (custom packaging available)

**Molecular formula:** C<sub>12</sub>H<sub>6</sub>N<sub>2</sub>O<sub>8</sub>

**Molar mass:** 330.21 g mol<sup>-1</sup>

**Density:** 1.963 g/cm<sup>3</sup>

**Country of Origin:** South Korea

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