

# MITOCHONDRIC



## Clinical Applications

- Methylation helps improve absorption and stability\*
- Powerful Antioxidant Support\*
- Supports Healthy Cellular Function\*
- Produces Changes Associated with Longer Lifespan (including activation of sirtuins)\*
- Supports Cardiovascular/Neurological Health\*

*Mitochondriac provides a complete bioflavonoid complex with resveratrol, quercetin, and pterostilbene. These three antioxidants work together synergistically. Pterostilbene, a new focus of scientific research, is methylated resveratrol, a bio-optimized form that complements resveratrol and quercetin. These compounds are being extensively studied in the areas of cardiovascular health and aging.\**

All MSW Nutrition Formulas Meet or Exceed cGMP Quality Standards

## Discussion

Resveratrol (RES) (3,5,4'-trihydroxystilbene) is a stilbenol derived from stilbene, a natural plant product. RES is found in varying amounts in grapes, various berries, plums, peanuts (and pines). Oral resveratrol is rapidly metabolized via sulfate conjugation by the intestine/liver.

<sup>[1]</sup> The methyl capping of all free hydroxyl groups (as in Pterostilbene) results in dramatically higher hepatic metabolic stability, intestinal absorption and membrane transport compared to unmethylated RES.<sup>[2,3]</sup> Quercetin, pterostilbene and resveratrol are synergistic antioxidants, with quercetin seemingly aiding in the absorption of resveratrol.\*<sup>[4]</sup>

Stilbenols are polyphenolic compounds that have cell-protecting properties.<sup>[5]</sup> For RES, this action has mostly been linked to growth and death regulatory pathways. Research published in 2008 also demonstrated RES's contribution to the maintenance of genome stability. Pterostilbene and quercetin, structurally-related and naturally-occurring, small polyphenols, show longer half-life in vivo than unmethylated resveratrol and have been shown to work synergistically to protect cellular health.\*<sup>[6]</sup>

As exciting as its role in chemoprotection, is resveratrol's ability to produce changes associated with longevity. These include increased insulin sensitivity, reduced IGF-1, increased AMP-activated protein kinase and peroxisome proliferator-activated receptor-gamma coactivator 1 alpha activity, increased mitochondrial number and improved motor function. RES opposed the effects of the high calorie diet in 144 of 153 significantly altered gene pathways.<sup>[7]</sup> RES activates sirtuins including SIR2, a special longevity cellular<sup>[8]</sup> and SIRT1 that helps protect nerve cells.\*<sup>[9]</sup>

In vitro, ex vivo and animal experiments have shown that the attributes of RES such as its powerful antioxidant activity, modulation of hepatic apolipoprotein and lipid synthesis, inhibition of platelet aggregation, and inhibition of human platelet and neutrophil production of proatherogenic eicosanoids favor protection against atherosclerosis.\*<sup>[10]</sup>

Resveratrol's numerous anti-inflammatory properties may explain why it has so many far-reaching health benefits. It inhibits synthesis and release of pro-inflammatory mediators, modifies eicosanoid synthesis, and inhibits activated immune cells. By inhibiting either NF-(kappa)B or the activator protein-1 (AP-1), resveratrol also appears to inhibit inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2).<sup>[11]</sup> Specific human dosing to support a healthy inflammatory response has not yet been established.\*<sup>[12]</sup>

**\*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.**

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# Supplement Facts

Serving Size: 1 Capsule  
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Quercetin (as quercetin dihydrate)(from <i>Sophora japonica</i> )(bud)	250 mg	**
<i>trans</i> -Resveratrol (as <i>Polygonum cuspidatum</i> root extract)	75 mg	**
<i>trans</i> -Pterostilbene <sup>S1</sup>	62.5 mg	**

\*\* Daily Value not established.

**Other Ingredients:** HPMC (capsule), microcrystalline cellulose, stearic acid, magnesium stearate, silica, and medium-chain triglyceride oil.

**Pteropure<sup>®</sup> S1.** Pteropure<sup>®</sup> is a registered trademark of ChromaDex, Inc.



## Directions

Take one capsule twice daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

## Storage:

Keep closed in a cool, dry place out of reach of children.

## References

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## Formulated To Exclude

Wheat, gluten, yeast, soy, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, and artificial preservatives.

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