



# Resveratin™ PLUS

(Methylated Resveratrol)

NEW AND IMPROVED FORMULA!



## 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
- Anti-inflammatory

*Resveratin™ PLUS is a bioflavonoid complex containing three synergistic antioxidants: pterostilbene (methylated resveratrol), resveratrol and quercetin. The latter two ingredients are present in a controlled-delivery form available from new, patent-pending, technology that results in improved uptake and stability with more pronounced benefits. The three compounds are being studied extensively in the areas of cardiovascular health, cell replication, capillary integrity and anti-aging.*

All XYMOGEN® 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>[7,8]</sup> RES activates sirtuins including SIR2, a special longevity cellular<sup>[9]</sup> and SIRT1 that helps protect nerve cells.<sup>[10]</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 pro-atherogenic eicosanoids favor protection against atherosclerosis.<sup>[11,12]</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>[13]</sup> Specific human dosing to support a healthy inflammatory response has not yet been established.<sup>[14]</sup>

Resveratin™ PLUS  
(Methylated Resveratrol)



## S U P P L E M E N T F A C T S

Serving Size: 2 capsules

Servings Per Container: 30

AMOUNT PER SERVING

**Quercetin 95%** **500 mg\***

**Resveratrol** **150 mg\***  
(as *Polygonum cuspidatum* extract, 50%)

**Methylated Resveratrol (*Pterostilbene*) 125 mg\***

\* Daily value not established.

**OTHER INGREDIENTS:** Rice Protein Powder, Microcrystalline Cellulose, Carboxy Methylcellulose, Silica, Stearic Acid, Magnesium Stearate.

This product does not contain wheat, gluten, soy, dairy, egg, fish/shellfish, or nuts/tree nuts.

## Dosing

Take one capsule twice a day or as directed.

## Cautions:

Consult your healthcare practitioner prior to use if you have or suspect you have a medical condition, are taking prescription drugs or are pregnant or lactating.

## References

1. Wenzel E, Somoza V. Metabolism and bioavailability of trans-resveratrol. *Mol Nutr Food Res*. 2005 May;49(5):472-81. [PMID:15779070]
2. Walle T, et al. High absorption but very low bioavailability of oral resveratrol in humans. *Drug Metab Dispos*. 2004 Dec;32(12):1377-82.[PMID:15333514]
3. Wen X, Walle T. Methylated flavonoids have greatly improved intestinal absorption and metabolic stability. *Drug Metab Dispos*. 2006 Oct;34(10):1786-92 [PMID: 16868069]
4. Morimitsu Y, Sugihara N, Furuno K. Inhibitory effect of flavonoids on sulfo- and glucurono-conjugation of acetaminophen in rat cultured hepatocytes and liver subcellular preparations. *Biol Pharm Bull*. 2004 May;27(5):714-7. [PMID: 15133252]
5. Fresco P, Borges F, Diniz C, Marques MP. New insights on the anticancer properties of dietary polyphenols. *Med Res Rev*. 2006 Nov;26(6):747-66 [PMID: 16710860]
6. Whitsett TG Jr, Lamartiniere CA. Genistein and resveratrol: mammary cancer chemoprevention and mechanisms of action in the rat. *Expert Rev Anticancer Ther*. 2006 Dec;6(12):1699-706. [PMID: 17181483]
7. Ferrer P, et al. Association between pterostilbene and quercetin inhibits metastatic activity of B16 melanoma. *Neoplasia*. 2005 Jan;7(1):37-47. [PMID:15736313]
8. Beaudoux JL, et al. Resveratrol: a relevant pharmacological approach for the treatment of metabolic syndrome? *Curr Opin Clin Nutr Met Care* 2010, 13:729-736
9. Baur JA, et al. Resveratrol improves health and survival of mice on a high-calorie diet. *Nature*. 2006 Nov 16;444(7117):337-42. [PMID:17086191]
10. Stefani M, et al. The effect of resveratrol on a cell model of human aging. *Ann N Y Acad Sci*. 2007 Oct;1114:407-18. [PMID: 17804521]
11. Tang BL, Chua CESIRT1 and neuronal diseases. *Mol Aspects Med*. 2007 Feb 16 [PMID: 17397914]
12. Kennedy DO, et al. Effects of resveratrol on cerebral blood flow variables and cognitive performance in humans: a double-blind, placebo-controlled, crossover investigation. *Am J Clin Nutr* 2010;91:1590-7.
13. Soleas GJ, Diamandis EP, Goldberg DM. Resveratrol: a molecule whose time has come? And gone? : *Clin Biochem*. 1997 Mar;30(2):91-113 [PMID:9127691]
14. de la Lastra CA, Villegas I. Resveratrol as an anti-inflammatory and anti-aging agent: mechanisms and clinical implications. *Mol Nutr Food Res*. 2005 May;49(5):405-30 [PMID:15832402]
15. Hougee S, et al. Selective COX-2 inhibition by a *Pterocarpus marsupium* extract characterized by pterostilbene, and its activity in healthy human volunteers. *Planta Med*. 2005 May;71(5):387-92. [PMID: 15931573]

## Storage:

Keep out of reach of children. Store at 59°-86° F (15°-30°C). Protect from light and moisture.

Additional references available upon request

\*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.