



## CLINICAL APPLICATIONS

- Methylation provides significant improvement in 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

*Resveratrol™ 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, patentpending 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 3rd Opinion Inc® 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 are chemopreventive.<sup>5</sup> As a chemo-preventive agent, RES has mostly been linked to growth and death regulatory pathways. Research published in 2008 also demonstrated resveratrol's contribution to the maintenance of genome stability. Resveratrol interferes with all three stages of carcinogenesis – initiation, promotion and progression. It can potentially modulate cell death, as well as cell cycle and estrogen receptor function in breast cancer cell lines.<sup>6</sup> Pterostilbene and quercetin, structurally related and naturally-occurring, small polyphenols, show longer half-life in vivo than unmethylated resveratrol and have been shown to synergistically be chemoprotective.<sup>7</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. Resveratrol opposed the effects of the high calorie diet in 144 of 153 significantly altered gene pathways.<sup>8</sup> Resveratrol activates sirtuins including SIR2, a special longevity cellular enzyme<sup>9</sup> and SIRT1 that affords protection against neuronal degeneration.<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 human platelet and neutrophil production of pro-atherogenic eicosanoids favor protection against atherosclerosis.<sup>11</sup>

Resveratrol 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>12</sup> Specific human dosing to obtain an anti-inflammatory effect has not yet been established.<sup>13</sup>

DISTRIBUTED BY:  
THE 3RD OPINION INC.  
P.O. Box 10  
CHATTANOOGA, OK 73528  
1-800-431-7902

RESVERATROL™



## Supplement Facts

Serving Size: 2 Capsules  
Servings Per Container: 30

	Amount Per Serving	%Daily Value
Quercetin 95%	250 mg	**
Pterostilbene (as <i>Pterocarpus marsupium</i> extract, 25%) [pTerinol™]	125 mg	**
Resveratrol (as <i>Polygonum cuspidatum</i> extract, 50%)	30 mg	**

\*\* Daily Value not established.

**Other Ingredients:** Modified cellulose gum, stearic acid, silicon dioxide, magnesium stearate, and rice powder.

## DOSING:

Take one capsule twice a day or as directed

## 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. 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]
9. Stefani M, et al. The effect of resveratrol on a cell model of human aging. *Ann NY Acad Sci*. 2007 Oct;1114:407-18. [PMID: 17804521]
10. Tang BL, Chua CESIRT1 and neuronal diseases. *Mol Aspects Med*. 2007 Feb 16 [PMID: 17397914]
11. 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]
12. 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]
13. Hougee S, Faber J, Sanders A, de Jong RB, van den Berg WB, Garssen J, Hoijer MA, Smit HF. 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.

## 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.

\*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.

