# pTeroPure®

## Pterostilbene

**If you like the benefits of resveratrol, then it is time to upgrade to PTEROPURE® PTEROSTILBENE**

## What is pterostilbene?

Pterostilbene is a naturally occurring antioxidant found in blueberries and some grape varieties[1,2]. It is a polyphenolic compound that is structurally related to resveratrol, however it possesses superior absorption ability[3].

pTeroPure® Pterostilbene is a 99% pure, nature-identical, synthesized form of trans-pterostilbene.

## Why is pTeroPure® pterostilbene important?

Pterostilbene is generated by plants as part of the plant's natural defense system against pathogens[4]. It possesses strong antioxidant and radical scavenging activities [2, 5-7].

## What makes pterostilbene unique from resveratrol?

Pterostilbene is more bioavailable than resveratrol[3, 8].

- While structurally related to resveratrol, pterostilbene differs from resveratrol by having an additional molecular group that increases its affinity for fats. This structural difference results in improved bioavailability by reducing its susceptibility to first pass metabolism in the intestinal cells and liver[2].
- In a comparative pharmacokinetic animal study of oral resveratrol vs. pterostilbene, pterostilbene was about 80% bioavailable as compared to just over 20% for resveratrol[3].

Pterostilbene was also found to be more effective in enhancing cellular antioxidant capacity, when compared to resveratrol, in mice[9].

## Pterostilbene is best known for its powerful antioxidant capacity.

Studies in cell models have demonstrated comparable results using purified pterostilbene and blueberry juice and extracts, which has led to the hypothesis that pterostilbene could be responsible for the antioxidant effects seen in studies of blueberries[7]. Antioxidant effects have been demonstrated for pterostilbene in cardiovascular cell models[10, 11]. The anti-oxidant inducing capacity of pterostilbene is thought to be related to functional benefit[2].

## Evidence for pterostilbene in healthy aging

Animal studies demonstrate that pterostilbene has beneficial effects on cognition and neural function during aging[12, 13]. Pterostilbene has been shown to be superior to resveratrol in preserving cognitive function in a mouse model of accelerated aging[14].

## Human study of pterostilbene

Pterostilbene has been studied for the purpose of evaluating safety in humans consuming doses of up to 250 mg/d for 8 weeks. There was no effect of pterostilbene on safety outcomes including: blood markers of liver and kidney function, and adverse events reported during the study[15, 16].

## Claims Supported by Science

- Promotes healthy cellular function with powerful antioxidant activities[7]*
- Promotes healthy blood flow and circulation[16]*
- Promotes cognitive function as demonstrated in animal models[13, 14]*
- Supports cardiovascular health as demonstrated in cellular and animal models[2, 7]*

## Regulatory Status of pTeroPure®

pTeroPure® is generally recognized as safe (GRAS) for use in a variety of foods when use levels in each foodstuff do not result in a cumulative intake from all uses that exceeds 1890 mg/person/day.

## pTeroPure® Patents

pTeroPure® has six patents issued with many more pending.

## Potential pTeroPure® Applications

pTeroPure® can be used in a variety of forms such as a capsule, tablet, melt, or powder for dietary supplements.

* 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.

pTeroPure®
Pterostilbene

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## References


1. Aiyer, H.S., et al., Influence of berry polyphenols on receptor signaling and cell-death pathways: implications for breast cancer prevention. J Agric Food Chem, 2012. 60(23): p. 5693-708.
2. Kosuru, R., et al., Promising therapeutic potential of pterostilbene and its mechanistic insight based on preclinical evidence. Eur J Pharmacol, 2016. 789: p. 229-43.
3. Kapetanovic, I.M., et al., Pharmacokinetics, oral bioavailability, and metabolic profile of resveratrol and its dimethylether analog, pterostilbene, in rats. Cancer Chemother Pharmacol, 2011. 68(3): p. 593-601.
4. Langcake, P., Disease resistance of Vitis spp. and the production of the stress metabolites resveratrol, epsilon-viniferin, alpha-viniferin and pterostilbene. Physiol Plant Pathol, 1981. 18: p. 213-226.
5. Remsberg, C.M., et al., Pharmacometrics of pterostilbene: preclinical pharmacokinetics and metabolism, anticancer, antiinflammatory, antioxidant and analgesic activity. Phytother Res, 2008. 22(2): p. 169-79.
6. Rimando, A.M., et al., Cancer chemopreventive and antioxidant activities of pterostilbene, a naturally occurring analogue of resveratrol. J Agric Food Chem, 2002. 50(12): p. 3453-7.
7. McCormack, D. and D. McFadden, A review of pterostilbene antioxidant activity and disease modification. Oxid Med Cell Longev, 2013. 2013: p. 575482.
8. Yeo, S.C., P.C. Ho, and H.S. Lin, Pharmacokinetics of pterostilbene in Sprague-Dawley rats: the impacts of aqueous solubility, fasting, dose escalation, and dosing route on bioavailability. Mol Nutr Food Res, 2013. 57(6): p. 1015-25.
9. Chiou, Y.S., et al., Pterostilbene is more potent than resveratrol in preventing azoxymethane (AOM)-induced colon tumorigenesis via activation of the NF-E2-related factor 2 (Nrf2)-mediated antioxidant signaling pathway. J Agric Food Chem, 2011. 59(6): p. 2725-33.
10. Park, E.S., et al., Pterostilbene, a natural dimethylated analog of resveratrol, inhibits rat aortic vascular smooth muscle cell proliferation by blocking Akt-dependent pathway. Vascul Pharmacol, 2010. 53(1-2): p. 61-7.
11. Zhang, L., et al., Pterostilbene protects vascular endothelial cells against oxidized low-density lipoprotein-induced apoptosis in vitro and in vivo. Apoptosis, 2012. 17(1): p. 25-36.
12. Joseph, J.A., et al., Cellular and behavioral effects of stilbene resveratrol analogues: implications for reducing the deleterious effects of aging. J Agric Food Chem, 2008. 56(22): p. 10544-51.
13. Poulose, S.M., et al., Effects of pterostilbene and resveratrol on brain and behavior. Neurochem Int, 2015. 89: p. 227-33.
14. Chang, J., et al., Low-dose pterostilbene, but not resveratrol, is a potent neuromodulator in aging and Alzheimer's disease. Neurobiol Aging, 2012. 33(9): p. 2062-71.
15. Riche, D.M., et al., Analysis of safety from a human clinical trial with pterostilbene. J Toxicol, 2013. 2013: p. 463595.
16. Riche, D.M., et al., Pterostilbene on metabolic parameters: a randomized, double-blind, and placebo-controlled trial. Evid Based Complement Alternat Med, 2014. 2014: p. 459165


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