Purenenergy

Caffeine Pterostilbene Co-Crystal
What is PURENERGY®?

PURENERGY® is a co-crystal form of caffeine and pTeroPure® pterostilbene. This unique co-crystal form allows for optimal delivery of 2 bioactive ingredients:

Caffeine is well known to improve cognitive performance, mood, and alertness \(^{1-3}\).

Pterostilbene is a naturally occurring and powerful antioxidant found in blueberries and some wine grapes\(^{4, 5}\). pTeroPure® pTeroPure® Pterostilbene is a 99% pure, nature-identical, synthesized form of trans-pterostilbene.

What makes PURENERGY® the optimal delivery system for caffeine and pterostilbene?

PURENERGY® delivery system offers the benefits of pterostilbene and caffeine in a single co-crystal.

Though pterostilbene is known to be significantly more bioavailable than resveratrol\(^{6}\), adding a co-crystal with water soluble caffeine further improves the absorption of lipophilic pterostilbene\(^{7, 8}\) making PURENERGY® the optimal delivery system.

The benefits and advantages of pTeroPure® pterostilbene

Pterostilbene is best known for its powerful antioxidant capacity.

- Pterostilbene is generated by plants as part of the plant’s natural defense system against pathogens\(^{9}\). It possesses strong antioxidant and radical scavenging activities \(^{5, 10-12}\).
- 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\(^{12}\). The anti-oxidant inducing capacity of pterostilbene is thought to be related to functional benefit\(^{5}\). Similar antioxidant findings have been demonstrated for pterostilbene in cardiovascular cellular models\(^{13, 14}\).
Pterostilbene is superior to resveratrol

- Pterostilbene is more bioavailable than resveratrol\(^6\). In a comparative pharmacokinetic study of oral resveratrol vs. pterostilbene in an animal model, pterostilbene was about 80% bioavailable as compared to just over 20% for resveratrol. Pterostilbene has been shown to be more effective in enhancing cellular antioxidant capacity, when compared to resveratrol, in mice\(^15\).

Pterostilbene is linked to healthy aging

- Animal studies demonstrate that pterostilbene has beneficial effects on cognition and neural function during aging\(^16,17\). Pterostilbene has been shown to be superior to resveratrol in preserving cognitive function in a mouse model of accelerated aging\(^18\).

Regulatory Status of PURENERGY®

PURENERGY® is comprised of two generally recognized as safe (GRAS) food ingredients.

- Caffeine is GRAS for use in cola-type beverages in accordance with good manufacturing practice at levels up to 0.02 percent (200 ppm) (21 CFR 182.1180).
- pTeroPure® is self-affirmed 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.

Note to customers: When formulating with PURENERGY® it is important to stay within the limits of GRAS for both caffeine and pterostilbene.

Potential PURENERGY® Applications

PURENERGY® can be used in a wide variety of forms such as capsules, melts, tablets, or powders.

* 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.
References


