Discussion

Caffeine Pterostilbene Co-Crystal
Caffeine pterostilbene co-crystal is an innovative ingredient that combines caffeine with pterostilbene—a highly bioavailable analog of resveratrol—to form a unique co-crystal structure. It appears that this unique structure affects the way the body utilizes caffeine. As such, it may offer significant advantages over caffeine alone.

Study Findings
In a rat study (n=6), the half-life of the caffeine from caffeine pterostilbene co-crystal was eight hours, while that of ordinary caffeine was just three hours.[1] In a preliminary, four-week, single-blind, crossover human study (n=12) that compared 232 mg of caffeine pterostilbene co-crystal (providing 99.76 mg of caffeine) to 100 mg of ordinary caffeine, the following effects were demonstrated\(^5\rightarrow^8\):

- Caffeine pterostilbene co-crystal delivered almost 30% more caffeine into the blood than ordinary caffeine.*
- The absorption rate of the caffeine from caffeine pterostilbene co-crystal was significantly slower by approximately 30% compared to ordinary caffeine.*
- The half-life of the caffeine from caffeine pterostilbene co-crystal was extended significantly by approximately 25% compared to ordinary caffeine.*
- At 4 hours, serum showed 45% more caffeine from caffeine pterostilbene co-crystal compared to ordinary caffeine.*
- At 6 hours, serum showed 51% more caffeine from caffeine pterostilbene co-crystal compared to ordinary caffeine.*
- Caffeine pterostilbene co-crystal had no adverse effect.*

While the results of these studies are promising, larger studies are needed to validate the findings and determine if these findings translate into a lengthened energy effect.*

More Energy
Taken together, data from these studies suggest that the effects of caffeine from caffeine pterostilbene co-crystal may last longer than the effects from ordinary caffeine and point to a potential for reducing total caffeine intake due to caffeine pterostilbene co-crystal’s more efficient delivery and slower absorption rate. These are encouraging factors for people who wish to reduce their caffeine intake.*

Slower Caffeine “Finish”
Scientists are researching whether or not the extended half-life and slower absorption rate of caffeine from caffeine pterostilbene co-crystal can produce a more moderated and gradual finish. This may help prevent the “crash” associated with regular caffeine, which may help your energy last longer. With just 5 g of carbohydrate per serving and zero sugars, PUMP LIFE simply gives your body what it needs to produce energy.*

PUMP LIFE transforms water into a great-tasting, revitalizing energy drink. Each stick provides a combination of B Vitamins, electrolytes, trace minerals, amino acids, herbs, and antioxidants to fuel your body’s energy production. Building on these important nutrients, PUMP LIFE also features caffeine pterostilbene co-crystal, a technology-driven, patented ingredient that combines caffeine and pterostilbene. Initial reports suggest that caffeine pterostilbene co-crystal’s caffeine may be absorbed more slowly and stay in your system longer than regular caffeine, which may help your energy last longer. With just 5 g of carbohydrate per serving and zero sugars, PUMP LIFE simply gives your body what it needs to produce energy.*

All HHH LLC Formulas Meet or Exceed cGMP Quality Standards

Continued on next page

*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.
Supplement Facts

Serving Size: 1 Stick Pack (about 7.5 g)
Serves Per Container: 30

Amount Per Serving* Daily Value

Carbohydrates 20
Total Carbohydrate 6 g 2%* (as polyethylene glycol 3000, sucrose, cellulose, Modified Food Starch, maltodextrin, citric acid, sodium bicarbonate, malic acid, sodium ascorbate, potassium ascorbate, calcium ascorbate, and zinc ascorbate)

Sodium 465 mg 25%* (as sodium chloride, sodium bicarbonate)
Potassium 280 mg 10%* (as potassium citrate, potassium chloride)
Calcium 130 mg 6%* (as tricalcium phosphate, calcium citrate, calcium lactate)
Magnesium 150 mg 6%* (as magnesium sulfate, magnesium oxide)
Phosphorous 465 mg 15%* (as tricalcium phosphate)
Vitamin C 10 mg 10%* (as sodium ascorbate, potassium ascorbate, calcium ascorbate, and zinc ascorbate)
Vitamin B6 0.5 mg 10%* (as pyridoxal 5'-phosphate)
Thiamin (as thiamine HCl) 0.5 mg 22%* (as thiamine HCl)
Folate (as Quatrefolic® (6S)-5-methyltetrahydrofolic acid, glucosamine salt) 40 mcg DFE 286%*
Vitamin B12 (as cyanocobalamin) 2 mcg 162%* (as cyanocobalamin)
Pantothenic Acid (as d-calcium pantothenate) 3 mg 60%* (as d-calcium pantothenate)
Chromium (as TRAACS® chromium nicotinate glycinate chelate) 28 mcg 22%* (as TRAACS® chromium nicotinate glycinate chelate)
Zinc (as Zn TRAACS® zinc glycinate chelate) 1.7 mg 27%* (as TRAACS® zinc glycinate chelate)
Manganese (as TRAACS® manganese bisglycinate chelate) 0.5 mg 22%* (as TRAACS® manganese bisglycinate chelate)
Copper (as TRAACS® copper glycinate chelate) 1 mcg 100%* (as TRAACS® copper glycinate chelate)
Selenium 40 mcg 22%* (as selenized barley)
SAG is an orally stable glutathione that has been shown to cross the blood-brain barrier, protect brain cells, and help minimize reactive oxygen species.*

Other Ingredients: Malodextrin, citric acid, potassium bicarbonate, malic acid, sodium bicarbonate, natural flavors (no MSG), stevia leaf extract, and silica.

*Caffeine phosphatase crystal, with whole coffee fruit (Coffea arabica/whole coffee fruit) (40% [polyphenols, 15% catechins, <10% caffeine, S-acetylated-glutathione, and acetyl-l-carnitine (as acetyl-l-carnitine HCI)], yielding a total of 50 mg of caffeine.

Directions

Dissolve the contents of one stick pack in 6-12 oz of water according to preferred sweetness. Consume the effervescent drink once daily, or use as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner.

Caffeine should not be combined with synephrine or ephedrine. Use cautiously if you have a history of abnormal heart rhythm. Do not use if tamper seal is damaged.

Electrolytes and Antioxidants

Electrolytes—including sodium, potassium, and magnesium—are important for energy production, nerve transmission, muscle contractions, pH balance, fluid balance, and more. Conditions that promote excessive sweating and increased metabolic activity can require replacement of these important minerals and increase the need for antioxidants. PUMP LIFE provides 130 mg of sodium, 280 mg of potassium, and 150 mg of magnesium in each serving. To support protection from free radicals, PUMP LIFE provides 500 mg of vitamin C in the form of four mineral ascorbates, as well as natural vitamin E, selenium, green tea extract, and s-acetyl-L-glutathione (SAG). SAG is an orally stable glutathione that has been shown to cross the membrane of the mitochondria, which increases the organelle’s activity and helps minimize reactive oxygen species.*

Herbs and Amino Acids

PUMP LIFE combines caffeine pterostilbene co-crystal in a proprietary blend with various herbs and amino acids, including green tea extract, coffee fruit extract, taurine, albumin, and L-arginine alpha-ketoglutarate. This proprietary blend is designed to complement the activities of caffeine pterostilbene co-crystal. Furthermore, some of these individual ingredients taken in high doses have roles in mitochondrial biogenesis or are known to have a positive influence on exercise performance.*

B Vitamins

As essential parts of coenzymes, these water-soluble nutrients are integral to the complex biochemical processes that convert food to glucose and ATP—the energy used by cells. Vitamin B12 also works closely with folate to help make red blood cells and facilitate the work of iron in the body. Iron helps carry oxygen to all cells, including muscle cells, for use in the generation of energy.*

References


Does Not Contain

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

*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.