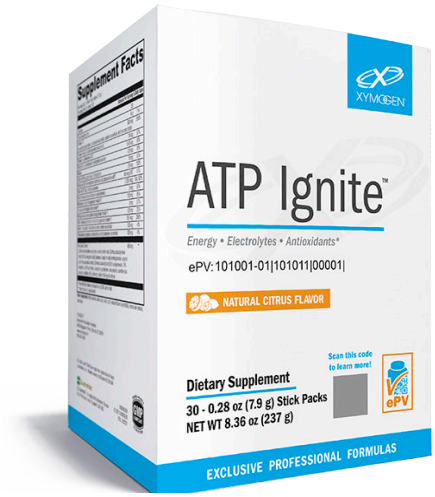
ATP Ignite™

Energy • Electrolytes • Antioxidants*



Available in Citrus and Mixed Berry

Clinical Applications

- Designed to Support a Healthy Energy Level*
- Supports Electrolyte Replacement*
- Helps Fight Free Radicals with Antioxidant Nutrients, Including S-Acetyl-L-Glutathione and 500 mg of Vitamin C*
- Provides an Alternative to Ordinary Caffeine*
- Provides Ingredients That Support ATP Biosynthesis*

ATP Ignite™ *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, ATP Ignite also features caffeine pterostilbene co-crystal, a technology-driven, patent-protected 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, ATP Ignite simply gives your body what it needs to produce energy.**

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[2,3]:

- 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 caffeinated energy products and may give ATP Ignite an advantage over formulas that use ordinary caffeine.*

All-Natural, No Sugars

ATP Ignite relies on natural ingredients, not ephedra or artificial stimulants. Furthermore, it provides only five grams of carbohydrates and zero sugars. By using natural flavors and stevia in place of sugar and other carbohydrates, the typical "sugar high" that is associated with many energy drinks can be avoided. Equally important, ATP Ignite contains no artificial colors.*

Caffeine, in General

In animal and human studies, caffeine has demonstrated positive effects on athletic performance, fatigue, and cognitive functions, such as supporting a healthy memory.[4-8] According to Meeusen et al, research on caffeine suggests its performance-enhancing effect is related to antagonism of the adenosine receptors that influence the dopaminergic and other neurotransmitter systems.*[9]

Pterostilbene

In the aforementioned human study, caffeine pterostilbene co-crystal also delivered approximately 50% more total pterostilbene into the blood than pterostilbene delivered alone,[2] thus potentially enhancing the functional benefits of pterostilbene. Pterostilbene is a highly bioavailable analog of resveratrol—a stilbenoid found in blueberries and grapes. Compared to resveratrol, pterostilbene is four times more bioavailable,[10] has a seven times greater half-life,[11] exhibits greater oral absorption and metabolic stability (pterostilbene is more lipophilic), and produces two to four times greater cellular uptake.[12] Aside from resveratrol's well-known antioxidant benefits that support cardiovascular health, pterostilbene is also known to activate certain proteins (i.e., *SIRT1* and PGC-1α) involved in increasing mitochondrial biogenesis and therefore ATP (energy) production.*[13-15]

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.

Continued on next page

ATP Ignite™ Citrus Supplement Facts

Serving Size: 1 Stick Pack (about 7.9 g)

	Amount Per Serving	%Daily Value
Calories	20	
Total Carbohydrate	4 g	1%†
Vitamin C (as sodium ascorbate, potassium ascorbate, calcium ascorbate, and zinc ascorbate)	500 mg	556%
Vitamin E (as d-alpha tocopheryl succinate)	10 mg	67%
Thiamin (as thiamine HCl)	0.45 mg	38%
Riboflavin (as riboflavin 5'-phosphate sodium)	0.5 mg	38%
Niacin	10 mg	63%
Vitamin B6 (as pyridoxal 5'-phosphate)	2.6 mg	153%
Folate (as (6S)-5-methyltetrahydrofolic acid, glucosamine salt[S2])	68 mcg DFE	17%
Vitamin B12 (as methylcobalamin)	2,500 mcg	104,167%
Pantothenic Acid (as d-calcium pantothenate)	3 mg	60%
Magnesium (as di-magnesium malate[S1])	150 mg	36%
Zinc (as zinc bisglycinate chelate[S1])	3 mg	27%
Manganese (as manganese bisglycinate chelate[S1])	0.5 mg	22%
Chromium (as chromium nicotinate glycinate chelate[S1])	100 mcg	286%
Sodium (as sodium bicarbonate and sodium ascorbate)	100 mg	4%
Potassium (as potassium bicarbonate and potassium ascorbate)	200 mg	4%
Proprietary Blend Caffeine pterostilbene cocrystal, whole coffee fruit (*Coffea arabica*) (whole fruit)(40% chlorogenic acid),, taurine, L-arginine alpha-ketoglutarate, organic green tea aqueous extract (*Camellia sinensis*) (leaf)(25% polyphenols, 15% catechins, <10% caffeine), s-acetyl-L-glutathione, and acetyl-L-carnitine (as acetyl-L-carnitine HCl), yielding a total of 95 mg of caffeine.	465 mg	**

† Percent Daily Values are based on a 2,000 calorie diet.
** Daily Value not established.

Other Ingredients: Maltodextrin, citric acid, malic acid, natural flavors (no MSG), stevia leaf extract, and silica.

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 professional.

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

STORAGE: Keep closed in a cool, dry place out of reach of children.

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

S1. Albion and TRAACS are registered trademarks of Albion Laboratories, Inc.

Quatrefolic® S2. Quatrefolic® is a registered trademark of Gnosis S.p.A. Produced under U.S. Patent 7,947,662.

ATP Ignite provides 130 mg of sodium, 280 mg of potassium, and 150 mg of magnesium in each serving. To support protection from free radicals, ATP Ignite 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

ATP Ignite combines caffeine pterostilbene co-crystal in a proprietary blend with various herbs and amino acids, including green tea extract, coffee fruit extract, taurine, 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.*[16-18]

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

1. Single-dose comparative pharmacokinetic study of pterostilbene, caffeine and combination of pterostilbene caffeine co-crystal in SD rats by oral route. Study report. Study No: VLL/0912/NG/D033; Version No.: 1.0. Genome Valley, Hyderabad, India: Vimta Labs Limited; November 2012:1-25. [on file]
2. A crossover, clinical evaluation to determine the relative bioavailability, pharmacokinetics and safety of PURENERGY™ and pTeroPure® in healthy adult males. PK study summary. Miami, FL/Irvine, CA: Miami Research Associates/ChromaDex Inc.; 2013:1-34. [on file]
3. Purenergy™: A novel next-generation caffeine alternative. Irvine, CA: ChromaDex Inc.; September 10, 2014:1-5. [on file]
4. Stadheim HK, Spencer M, Olsen R, et al. Caffeine and performance over consecutive days of simulated competition. *Med Sci Sports Exerc.* 2014 Sep;46(9):1787-96. [PMID: 25134002]
5. Pérez-López A, Salinero JJ, Abian-Vicen J, et al. Caffeinated energy drinks improve volleyball performance in elite female players. *Med Sci Sports Exerc.* 2014 Jul 18. [Epub ahead of print] [PMID: 2505139]
6. Burke LM. Caffeine and sports performance. *Appl Physiol Nutr Metab.* 2008 Dec;33(6):1319-34. [PMID: 19088794]
7. Costa MS, Botton PH, Mioranzza S, et al. Caffeine improves adult mice performance in the object recognition task and increases BDNF and TrkB independent on phospho-CREB immunocontent in the hippocampus. *Neurochem Int.* 2008 Sep;53(3-4):89-94. [PMID: 18620014]
8. Ronen A, Oron-Gilad T, Gershon P. The combination of short rest and energy drink consumption as fatigue countermeasures during a prolonged drive of professional truck drivers. *J Safety Res.* 2014 Jun;49:39-43. [PMID: 24913484]
9. Meeusen R, Roelands B, Spriet LL. Caffeine, exercise and the brain. *Nestle Nutr Inst Workshop Ser.* 2013;76:1-12. [PMID: 23899750]
10. Kapetanovic IM, Muzzio M, Huang Z, et al. Pharmacokinetics, oral bioavailability, and metabolic profile of resveratrol and its dimethylether analog, pterostilbene, in rats. *Cancer Chemother Pharmacol.* 2011 Sep;68(3):593-601. [PMID: 21116625]
11. Remsberg CM, Yáñez JA, Ohgami Y, et al. Pharmacometrics of pterostilbene: preclinical pharmacokinetics and metabolism, anticancer, antiinflammatory, antioxidant and analgesic activity. *Phytother Res.* 2008 Feb;22(2):169-79. [PMID: 17726731]
12. Nutakul W, Sobers HS, Qiu P, et al. Inhibitory effects of resveratrol and pterostilbene on human colon cancer cells: a side-by-side comparison. *J Agric Food Chem.* 2011 Oct 26;59(20):10964-70. [PMID: 21936500]
13. Ljubicic V, Burt M, Lunde JA, et al. Resveratrol induces expression of the slow, oxidative phenotype in mdx mouse muscle together with enhanced activity of the SIRT1-PGC-1α axis. *Am J Physiol Cell Physiol.* 2014 Jul 1;307(1):C66-82. [PMID: 24760981]
14. Jian B, Yang S, Chaudry IH, et al. Resveratrol restores sirtuin 1 (SIRT1) activity and pyruvate dehydrogenase kinase 1 (PDK1) expression after hemorrhagic injury in a rat model. *Mol Med.* 2014 Mar 13;20:10-6. [PMID: 24395567]
15. Alcaín FJ, Villalba JM. Sirtuin activators. *Expert Opin Ther Pat.* 2009 Apr;19(4):403-14. Review. [PMID: 19441923]
16. Campbell B, Roberts M, Kerksick C, et al. Pharmacokinetics, safety, and effects on exercise performance of L-arginine alpha-ketoglutarate in trained adult men. *Nutrition.* 2006 Sep;22(9):872-81. [PMID: 16928472]
17. Flôres MF, Martins A, Schimidt HL, et al. Effects of green tea and physical exercise on memory impairments associated with aging. *Neurochem Int.* 2014 Sep 6. [PMID: 25195719]
18. Pandareesh MD, Anand T. Ergogenic effect of dietary L-carnitine and fat supplementation against exercise induced physical fatigue in Wistar rats. *J Physiol Biochem.* 2013 Dec;69(4):799-809. [PMID: 23661316]

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.**

DRS-288
Rev. 07/29/22