

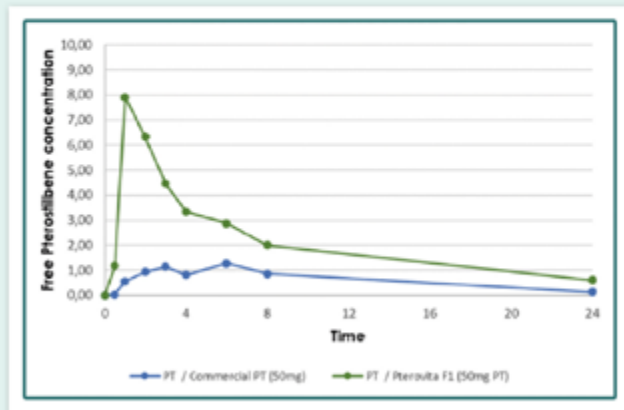


## PTEROVITA®: The Game-Changer in Pterostilbene Bioavailability for Enhanced Health Benefits

With a 7.4-fold increase in Cmax and a 4.4-fold improvement in AUC, Pterovita® dramatically reduces Tmax from 6 hours to just 1 hour and 20 minutes—delivering superior absorption and faster, more effective results compared to regular pterostilbene.

PTEROVITA

### COMPARATIVE PHARMACOKINETIC PROFILE PTEROVITA VS PTEROSTILBENE



New Jersey, October 2024

Pterovita® is a cutting-edge pterostilbene cocrystal, meticulously developed by Circe Scientific to dramatically enhance pterostilbene bioavailability and unlock its full potential.



As the only pterostilbene backed by human pharmacokinetic data and with self-GRAS status, Pterovita stands as the breakthrough ingredient your product line needs to deliver unmatched results.

### Higher Efficacy, Lower Dose: The Pterovita® Advantage

Clinical studies on regular pterostilbene show that only higher doses, like the 250 mg used in Riche’s 2014 study, demonstrated significant health improvements in hypertension and weight management. Lower doses, as seen in other studies (Hougee 2005; Majeed 2023), were not sufficient to achieve these benefits.

While regular pterostilbene requires higher doses to achieve meaningful health benefits, Pterovita offers a significant advantage in absorption and effectiveness.

At a clinically studied dose of just 75 mg, Pterovita achieves a 4-fold increase in absorption and reaches C<sub>max</sub> (peak blood concentration) 4 times faster than regular pterostilbene. Even more impressive, its C<sub>max</sub> is over 7 times higher, meaning a 75 mg dose of Pterovita can deliver better results than a 250 mg dose of regular pterostilbene.

*“Reducing the time to achieve pterostilbene C<sub>max</sub>, and reaching a higher C<sub>max</sub> value, is even more relevant than an AUC increase, as this initial peak is what is responsible for triggering all the signaling events associated with pterostilbene,”* notes Prof. Dr. José M. Estrela, a globally recognized expert in pterostilbene activity.

## The Bioavailability Problem: Why Most Pterostilbene Supplements Miss the Mark

While Riche (2014) demonstrated some health benefits of pterostilbene, no human clinical studies have fully replicated the impressive results seen in lab and animal models. These studies often relied on extremely high doses or delivery methods, like intravenous injections, that are not suitable for human nutraceutical use. For pterostilbene to deliver the same benefits in humans, it must reach certain concentrations in the bloodstream—something standard supplements with doses under 100 mg simply can't achieve.

To replicate the beneficial effects seen in pterostilbene research, supplements need to deliver equivalent levels of pterostilbene in the blood. Most supplements provide less than 100 mg, far below what's required. Simply increasing the dose of standard pterostilbene often isn't enough to achieve the desired results.

Contrary to popular belief, pterostilbene only reaches the often-misunderstood 80% bioavailability claimed

in animal studies when administered in extremely high doses (equivalent to 0.5 to 1.5 grams in humans) and fully dissolved. When taken in typical supplement doses of 100 mg in capsule form, pterostilbene creates a suspension in the gut rather than a solution, reducing bioavailability by 15-fold (Yeo, 2013). Increasing the dose isn't a simple fix either, as most of the compound passes through the body before it can fully dissolve.

### From Solubility to Superior Results: The Science Behind Pterovita®

- **Pterovita addresses the challenge of pterostilbene's limited bioavailability by significantly increasing solubility and accelerating its dissolution rate.** This ensures that absorbed product is rapidly replaced with newly dissolved product, allowing for highly bioavailable formulations across a broader dose range.
- Pterovita offers a cost-effective solution for standard doses while also enabling higher doses with greater bioavailability, which may be essential to achieve the benefits observed in certain in vivo studies.
- Extensive research has led to an optimized blend of excipients that enhances Pterovita's performance in human-like physiological conditions. This encapsulated formulation quickly achieved a stable supersaturated concentration, resulting in a fourfold increase in solubility and an impressive thirty-fivefold increase in dissolution rate compared to standard pterostilbene.


Building on these findings, pharmacokinetic clinical trials conducted by the R&D Unit in Nutrition and Health at Eurecat Technological Center confirmed that this solubility improvement translated to a fourfold boost in bioavailability. **A capsule containing 50 mg of pterostilbene (as 75 mg of Pterovita) significantly enhanced the pharmacokinetic profile, delivering superior absorption and effectiveness.**

Consistent with Hougee's clinical study, Pterovita at 75 mg (containing 50 mg of pterostilbene) achieved 12-fold higher levels of total pterostilbene in the bloodstream just three hours post-administration, compared to Hougee's

results with 450 mg of Pterocarpus extract (which provided only 24.75 mg of pterostilbene). Hougee noted that the low serum concentration of pterostilbene (196 nM) was fivefold lower than required for significant PGE2 inhibition, explaining the lack of activity. Had the same dose been administered as Pterovita, the desired blood levels and efficacy would likely have been achieved.

**Pterovita's advantage extends even further.** As the solid oral dose increases, the bioavailability gap widens in favor of Pterovita, because standard pterostilbene's bioavailability remains limited by its low solubility, while Pterovita continues to show proportional gains.

## Formulating with PTEROVITA®

- PTEROVITA can be incorporated into a wide range of products, including dietary supplements, functional foods, food bars, milk products, juices, and other nutritional innovations.
  - PTEROVITA is fully soluble in both water and lipids, offering high bioavailability.
  - In its raw form, PTEROVITA is a slightly yellow powder. Once dissolved, it turns clear, with no noticeable smell and a mildly bitter, spicy taste.
  - PTEROVITA has demonstrated solid stability for at least 30 months when stored at 25±2°C and 60±5% humidity, with the 3-year stability test still ongoing. It also remains stable under high pressure and temperatures up to 55°C.
- 
- PTEROVITA has been granted Generally Recognized as Safe (GRAS) status by an independent expert panel, with an established ADI of 220 mg/day.
  - PTEROVITA is guaranteed non-toxic, supported by 14-day comprehensive toxicity studies at doses up to 3 g per day, with a NOAEL of 300 mg/kg.
  - PTEROVITA is manufactured in compliance with food and pharmaceutical GMP standards and is third-party tested in an EU GMP-certified facility.
  - Technical package, samples and commercial quantities are available in the USA.

## What is it?

Pterovita® is a patented bioactive crystalline formula consisting of pterostilbene (nature's best SIRT1 activator and the most powerful antioxidant polyphenol) and picolinic acid (a human endogenous compound with neuroprotective properties).

Polyphenols are nature's gift for health, offering antioxidant protection, cardiovascular support, anti-inflammatory action, metabolic regulation, neuroprotective action, microbiota improvement, and more. Pterostilbene is the most promising and beneficial, but its low bioavailability has held it back... until now!

CIRCE Scientific has developed a formula that facilitates pterostilbene's fast and complete dissolution and absorption, providing at last the needed concentration to trigger its promising health benefits shown in studies. A pterostilbene that works.

## Main benefits

---

- **Anti-aging:** May support cellular function and contribute to slowing the aging process.
  - **Anti-inflammatory:** Could help alleviate inflammation and encourage natural healing.
  - **Neuroprotective:** Supports brain cell health and may promote cognitive well-being.
  - **Sports performance:** Assists in improving recovery after physical activity.
  - **Activates antioxidant system:** May enhance the body's natural antioxidant defenses to protect against damage.
  - **Regulates in cardiovascular health and diabetes:** Could help regulate blood sugar levels and promote cardiovascular wellness.
  - **Beauty from within** Contributes to radiant and healthy skin by nourishing cells from the inside out.
- 

*Elevate your product line with Pterovita, leading the way in innovative formulations for superior performance and unmatched efficacy.*

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.

The logo for NutriOriginal features the word "Nutri" in a black, sans-serif font, followed by "Original" in a green, sans-serif font. A small green leaf icon is positioned above the letter "i" in "Original".

info@nutrioriginal.com    www.nutrioriginal.com