

# Keywords

BioPerine®  
Nutrients enhancer  
Curcuma, β-carotene,  
CoQ10, Resveratrol

# Summary

BioPerine® is the only product sourced out of piperine to obtain a patented status for its ability to increase the bioavailability of nutritional compounds. Secondly, it is the only source from piperine to have undergone clinical studies to substantiate its safety and efficacy for nutritional use.

# BioPerine



SABINSA CORPORATION

### BioPerine® :

- is a standardized extract from the fruit of *Piper nigrum L* (black pepper)
- contains 95 percent of piperine
- may be co-administered with various nutrients for both human and animal health.
- is Nature's Bioavailability Enhancing If you lack the one ingredient that can change the way your body looks, just go for BioPerine®
- is patented and has been studied by Sabinsa.

Get more for your body from this supplement.

### How does BioPerine® work?

The metabolic process that generates energy at the cellular level in the human body is called thermogenesis. Though thermogenesis has been identified as a key factor in maintaining weight loss, it has also been identified as playing an integral role in utilizing the daily food and nutrients that the human body consumes. It sets in motion the mechanisms that lead to digestion and subsequent gastrointestinal absorption. Piperine, in the patented form of BioPerine® enhances the body's natural thermogenic activity-hence the term Thermonutrient®. This enhancement may be explained as a means of increasing the thermal energy sufficient to "power up" the mechanism related to thermogenesis. This in turn results in increased metabolic processes that creates a "demand" for "supply" of a broad range of nutrients that contribute to metabolism, i.e. vitamins, minerals, herbals, amino acids, etc. It is as if BioPerine®



activates a metabolic paddle wheel, of sorts, that selectively provides a more efficient mode of nutrient transportation into the blood. Non specific possible mechanisms promoting rapid absorption of nutrients :

- Increases blood supply to the GI tract
- Increases emulsifying content of the gut
- Increases active nutrient transport

### Advantages of BioPerine®

BioPerine® is the only product sourced out of piperine to obtain a patented status for its ability to increase the bioavailability of nutritional compounds. Secondly, it is the only source from piperine to have undergone clinical studies in the U.S. and in other countries to substantiate its safety and efficacy for nutritional use. It's an objectivated product, with a lot of sciences behind, for your kind support.

### Bioavailability Enhancer

Bioavailability is "the quantity of a substance, either nutrient, drug, or toxicant, that effectively reaches the target cells where it modifies, for good or bad, their metabolism and consequently their fate" (Basu, T.K). The nutritional materials which may be co-administered with BioPerine® are the following groups:

- **Herbal extracts** : (e.g. CURCUMIN, BOSWELIA SERRATA, ASHWAGANDHA, GINKGO BILOBA and CAPSAICIN)
- **Water-soluble vitamins** : (e.g. Vitamin B1, Vitamin B2, Niacinamide, Vitamin B6, Vitamin B12, Folic acid and Vitamin C)
- **Fat-soluble vitamins** : (e.g. Vitamin A, Vitamin D, Vitamin E, and Vitamin K)
- **Antioxidants** : (e.g. Vitamin A, Vitamin C, Vitamin E, alpha-carotene, beta-carotene, beta-cryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonoids complex, germanium, selenium and zinc).
- **Amino acids** : (e.g. lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, and methionine)
- **Minerals** : (e.g calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium).

If one believes that since BioPerine® is sourced out of black pepper, all one need to do is increase the consumption of black pepper. Again you have gone wrong, for the direct intake of black pepper will not help achieve enhanced nutrient absorption.

### Overview of the main studies

- BioPerine® increased the absorption of co-administered **beta-carotene** in human volunteers by 160%, using 5mg BioPerine®.

- Effect of BioPerine® on serum selenium levels during a 6 week supplementation trial in human volunteers : increase by 145% of the selenium levels over the presupplementation value (50 µg of elemental selenium in the form of Selenomethionine versus 50µg+5mg BioPerine®).
- Efficacy of BioPerine® (5 mg) on the bioavailability of Vitamin B6 absorption in human volunteers : increase by 250% of the vitamin B6 serum level after 2 hours compare to control (100mg B6 / 100mg B6+BioPerine®).
- Effect of BioPerine® on serum CoQ10 levels during a 21 day supplementation trial (+150% in serum, 90mg CoQ10+5mg BioPerine®).
- Effect of BioPerine® on Serum Concentrations of Curcumin in Human Volunteers. The relative bioavailability is improved by more than 1 500% when therapeutic effectiveness of curcumin is often limited due to its poor absorption from the GI tract. Many other studies have been conducted, the most recent one on the **resveratrol** : "We found that the degree of exposure (i.e. AUC) to resveratrol was enhanced to 229% and the maximum serum concentration (C max ) was increased to 1544% with the addition of piperine" (Mol. Nutr. Food Res. 2011, 55, 1-8). BioPerine® has legitimate application in the field of nutrition, particularly since we are becoming increasingly aware of the impact of nutritional deficiencies on our health.

### Dosage

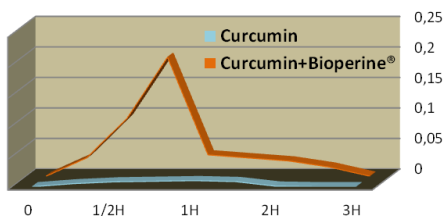
The recommended dosage is 5mg per serving dose.

Acute, subacute and chronic toxicity studies of piperine in laboratory animals indicate that piperine used even in a broad range of doses does not cause abnormalities in the general growth pattern, body to organ weight ratio, clinical symptomatology, or blood chemistry.

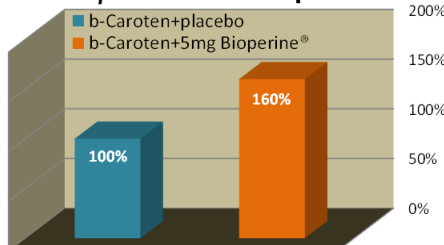
The dose of piperine considered to be bio enhancing for absorption of nutrients is calculated as 0.04 to 0.08 mg piperine/kg body weight.

That dose is 4,000 times less than the LD50 dose (dose toxic to 50% animals tested) of piperine established in mice and rats. Incidentally, the dose of piperine, which increased the bioavailability of the actives studied, was several times lower than the estimated amount of piperine consumed daily in the diet by an average individual in the USA (Majeed, M. et al.; 1999)

Serum concentration (µg/ml) Curcumin



AUC Comparison [%] β-caroten absorption



Serum CoQ10 [µg/ml] CoEnzyme Q10

