Biotics Research Corporation Product Showcase

Bio-Cyanidins®

Dietary Supplement

Plant Polyphenols

All higher plants contain an extensive array of polyphenols, flavonoids and complex aromatic compounds. The ability to synthesize these materials probably evolved in order to protect plant tissues from the potentially harmful effects of sunlight and oxygen.

Oligomeric proanthocyanidins (abbreviated as OPCs) represent a major class of polyphenols, consisting of dimers, trimers, and tetramers of flavones. Individual members are designated as procyanidin B series or procyanidin C series.

Pycnogenol®

Pycnogenol® refers to water-soluble proanthocyanidins extracted from the bark of a European pine, *Pinus maritime*, by a process patented by Dr. JacquesMasque from tannins and polymeric procyanidins. This standardized extract contains 85% proanthocyanidins, together with smaller amounts of ferulic acid, gallic acid and catechin, among others.

Grape Seed Extract (OPCs)

Grape seed OPCs refer to proanthocyanidins extracted from grape seeds (pips) using the same procedure developed for pine bark. Grape pip OPCs contain Gallicesters of proanthocyanidins, B2-3'-0-gallate, and related esters. Historically, isotopically labeled OPCs were isolated from grape vines grown with $14 - CO^2$ for bioavailability studies. **Pycnogenol®** and grape seed OPCs are similar, though not identical, in composition.

Polyphenols and Antioxidants

Polyphenols, such as proanthocyanidins, are common in the diet and have broad physiologic effects. As an example, many polyphenols and flavonoids have been shown to trap free radicals and prevent oxidative damage in a number of model systems.[2] **Pycnogenol®** and grape pip OPCs have been studied extensively in Europe and their antioxidant activity has been noted. [3]

Reactive forms of oxygen, such as hydrogen peroxide and superoxide, occur frequently in the body. They are generated by mitochondria and cytochrome P450 detoxication systems; by pollutants such as cigarette smoke, ozone and nitrogen oxides; and by chronic inflammation. Nutrition plays an important role in antioxidant defenses. The body employs protective enzymes, antioxidant nutrients and non-nutrients from food, as well as metabolites, to counter the action of oxidants and free radicals. However, when these defenses are depleted, proteins, lipids in membranes and DNA can be damaged. [4,5]

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Pycnogenol® (maritime pine bark extract)	15 mg	*
Grape Seed Extract (95% OPCs)	35 mg	*

***Daily Value not established**

Other ingredients: Cellulose, calcium carbonate, stearic acid (vegetable source), magnesium stearate (vegetable source) and modified cellulose gum.

***Pycnogenol®** is the registered trademark of Horphag Research Ltd. and is protected by patent #4,698, 360.*

RECOMMENDATION: One (1) tablet one (1) to two (2) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

NDC #55146-07800 Rev. 7/09

REFERENCES

1. Masquelier J. *United States Patent No. 4,698,366. Oct. 6, 1987.*
2. Roback J, Gryglewski RJ. Flavonoids are scavengers of superoxide anions. *Biochem Pharmacol 1987; 5:837-41.*
3. Facino RM et al. Free radical scavenging action and anti-enzyme activities of procyanidins from *Vitis unifera*. A mechanism for their capillary protective action. *Arzneim-Forsch 1994; 44:592-601.*
4. Stadtman ER. Metal ion-catalyzed oxidation of proteins; biochemical mechanism and biological consequences. *Free Radic Biol Med 1990; 9:315-25.*
5. MoslenTM, Smith CV. Free radical mechanisms of tissue injury. *CRC Press, Boca Raton 1992; pp. 2-20.*

BIOTICS® RESEARCH CORPORATION

"The Best of Science and Nature"

www.bioticsresearch.com

Rev. 10/09