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Pycnogenol and Skincare

Relatively unknown and not yet widely used in the cosmetic industry, *Pycnogenol*[™] is a nutrient with many powerful capabilities. This article will discuss through an examination of scientific research what constitutes Pycnogenol and why it can be successfully utilized in cosmetic formulations.

Properly used in concentrations high enough to facilitate change, Pycnogenol protects vitamin C's proven capability to stimulate collagen growth in the dermis, is a natural inhibitor of UVB radiation and oxidative stress, reduces inflammation, and is by far the most effective free radical scavenger scientists have yet discovered.

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Since the early 1400s, Northern American Indians have known what we in the skincare industry in America are now discovering: Pycnogenol is a powerful nutrient that is vastly more effective than any flavonoid nutrient (such as vitamins C or E) currently available. As we will discuss later in this article, it gains its effectiveness because it is not a simple flavonoid, but instead is composed of a blend of several specific flavonoids.

Scurvy was a nemesis of the European explorers of the 14th and 15th centuries. Often wiping out entire crews on ships at sea, they recognized the disease, but had no effective treatment for it. After the discovery of Canada's Gulf of St. Lawrence by Jacques Cartier, ice prevented Cartier and his fellow explorers from leaving the St. Lawrence waterway in the winter of 1534/5. While on board ship, they subsisted on salted meat and biscuits. In December 1543, the explorers were struck down by scurvy, and many died. Luckily for Cartier, he met a Quebec Indian who told him of a tea brewed from a large tree with evergreen leaves, the Ammedal tree. Within a week, the remaining explorers were cured of scurvy. The needles contained about 50 milligrams of vitamin C per 100 grams and the bark contained flavonoids, which amplify the antiscorbutic effect of vitamin C.

More than 400 years later, Professor Jacques Masquelier began researching an extract from the bark of Punis Maritime, a leucocyanidin (Masquelier, J. and Claveau, P., *Naturaliste Canada*, 93:345-8, 1966). He named this compound Pycnogenol, which means "substances which deliver condensation products."

In 1987, Professor Masquelier patented Pycnogenol for "preventing and fighting the harmful biological effects of free radicals" (Masquelier, J., Plant extract with a proanthocyanidins content as therapeutic agent having radical scavenging effect and use thereof, U.S. Patent No. 4,698,360).

Like vitamins C and E, Pycnogenol is an antioxidant that neutralizes unstable or "radical" oxygen molecules that attack the body's cells. When these "free radicals" go unchecked, they degrade collagen, reprogram DNA and are implicated in more than 60 diseases. Aging, inflammation and improper functioning of the circulatory, nervous and immune systems often result from free radical damage. Free radicals and other reactive oxygen species are formed at the sites of inflammation and contribute to tissue damage.

Pycnogenol is a special blend of bioflavonoids extracted from French Maritime pine tree bark.

The scavenging effect of Pycnogenol for radicals correlates with its anti-inflammatory properties.

Pycnogenol is a special blend of bioflavonoids extracted from French Maritime pine tree bark. Similar complex bioflavonoids can be found in grape seed extract, which has answered for researchers the age-old question of why French men have such a low incidence of heart disease in comparison to their American counterparts (Men's Health, Nov. 1995).

More specifically, Pycnogenol is comprised of simple bioflavonoids of the proanthocyanidin (PAC) family, plus dimers and oligomers of these simple

PACs, along with some very useful organic acids—caffeic, cinnamic, fumaic, gallic, vanillic, ferulic, and protocatechuic — and just the right amount of taxifolin.

Because Pycnogenol contains dimers and oligomers, it is a much more effective bioflavonoid than the commonly known nutrients, vitamins E and C. In fact, research shows that its antioxidant capabilities are 50 times greater than vitamin E and 20 times greater than vitamin C, in vitro (Masquelier, J. and Laparra, J., *Radical Scavenger Effect (RSE) of Proanthocyanidins*, Proanthocyanine Et Radicaux Libres, 1985). Dimers and oligomers are very small and easily absorbed and transported in the blood, yet they are just different enough to produce between antioxidant activity and capillary strengthening. It is the ability of Pycnogenol to strengthen the capillaries that sets it apart from other nutrients. The part of the body's circulatory system that actually does the work of delivering oxygen, nutrients, and removing wastes, the capillaries are integral to healthy looking and acting skin. When Pycnogenol is first absorbed in the intestine, the entire complex is delivered into the blood. Cells are nourished by PACs, PAC dimers, PAC oligomers, and organic acids.

The skincare industry is now touting the benefits of antioxidants — and rightly so. Environmental defense creams proliferate. Industry giants Estee Lauder, Chanel and Pond's all claim to be able to "defend" consumers against the ravages of the environment. While antioxidants do have a direct connection to healthful benefits, including vitamin C's ability to stimulate collagen growth, there is no guarantee that their percentage in a cream is high enough to make a difference in the skin. In fact, antioxidants may have been included in a product merely to retard spoilage.

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In addition, vitamins C and E are large molecules that have a **difficult** time penetrating to the dermis when applied topically. However, there is a synergistic relationship between vitamin C and Pycnogenol's proven ability to scavenge free radicals. Pycnogenol clears the path for vitamin C to encourage growth of collagen resulting in thicker, smoother skin. Taken internally and supported topically, Pycnogenol and vitamin C, in greater than trace amounts, make a strong combination for **healthy** skin. Because Pycnogenol is water soluble, and its molecular structure is so small, it is much more

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effective than either vitamins C or E when used topically. It is also non-toxic, accumulatively, like vitamin E (Faxon Meisner, professor of preventive medicine at the University of Wisconsin and Dr. Sheldon Pinnell, chief of dermatology at Duke University).

New "holistic" approaches like Skin Nutrition emphasize the importance of internal fortification through a specially formulated skin vitamin, as well as external application of product, for healthy skin. The Skin Nutrition formulas contain Pycnogenols and vitamin C, reinforcing the action of the nutrient with three multipurpose products that contain Pycnogenol and are highly effective (meaning the **actives** present in

the formulations are more than .05 percent). The focus for beauty is **shifting** from "young" to "healthy." Looking great at 50, 60 and 70 years old will soon become more **important** as the baby boomers climb up the age ladder.

Pycnogenol as a Natural **sunscreen**

Dr. Antti Arstila, a well-known cell biologist, toxicologist, pathologist and antioxidant **expert**, has done extensive work with Pycnogenol at the University of Jyvaeskylae, Finland. His findings indicate the usefulness of Pycnogenol as a UVB protectant. Because of a steady thinning of the **stratosphere's** ozone layer in recent years, the level of UV radiation reaching the ground has increased as much as 35 percent in winter and 7 percent in the summer.

Toronto scientists James Kerr and C.T. McElroy have been monitoring this steady increase. Dr. Antti's research shows that **W** radiation can produce a number of **dermatological** effects in humans including **erythema**, photosensitivity, immunological alterations, photoaging and **carcinogenesis**. UVB is considered to be the portion of the UV spectrum primarily responsible for the deleterious effect of solar UV radiation.

D pycnogenol has been shown to reduce the damage to the skin cells caused by UVB radiation in a biological research report entitled **Ultraviolet Radiation-induced Oxidative Stress in Cultured Human Skin Fibroblasts and Antioxidant Protection**, conducted at the University of Jyvaeskylae and published in May 1993. The study indicates that Pycnogenol reduces UVB

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radiation-induced cytotoxicity and inhibits lipid peroxidation in cultured human skin fibroblasts. It also shows that Pycnogenol scavenges superoxide radicals generated in the xanthine-xanthine oxidase systems in vitro.

These findings show that Pycnogenol can be used as an effective antioxidant to protect cells against UVB radiation-induced cell injury. In addition, Pycnogenol may be used as a superoxide radical scavenger to protect cells against not only UVB induced, but also superoxide-induced oxidative injuries.

Reducing Puffiness

Beyond Pycnogenol's usefulness in protecting the skin against harmful UVB radiation, the nutrient has also been shown to reduce inflammation. The cosmetic implications are obvious. The beauty industry has been trying for years, with limited success, to "reduce undereye puffiness." While Pycnogenol will not reduce the size of an enlarged under or lower eye fat pad (this is the job of a good plastic surgeon), it will help reduce inflammation caused by water retention or poor circulation.

Dr. Miklos Gabor of Szent-Gyorgi Medical University in Hungary is an expert in the relationship between flavoids and capillaries. He has been involved in researching the effects of Pycnogenol on capillaries since 1979 and has found that Pycnogenol protects capillaries against any of the stimuli that can cause an inflammatory response. His published research, *Scripta Phlebologica*, 1994, indicates that the anti-inflammatory action of Pycnogenol is based on increasing the capillary resistance. Pycnogenol increases weakened capillary resistance, decreases capillary permeability and improves circulation. The anti-inflammatory action is based on increased capillary resistance.

Dr. Gabor's work supports that of Dr. Arstila in Finland, who also found that the antioxidant action of Pycnogenol is able to scavenge superoxide radicals and reduce UVB radiation-induced cytotoxicity of fibroblasts, and inhibits lipid peroxidation.

Free radicals and other reactive oxygen species are formed at the sites of inflammation and contribute to tissue damage. The scavenging effect of Pycnogenol for radicals correlates with its anti-inflammatory activity.

Healthy Skin

Obviously, the best advice for achieving healthy skin is to live a healthy life. Drinking lots of purified water, exercising, staying out of the sun, not smoking, eating less fat, drinking less alcohol and using effective products topically will go a long way to creating smoother, clearer, firmer skin. The cosmetic industry now has the ability to keep the epidermis clean, clear and completely exfoliated. Now we can effect the look of the upper layers of the skin by helping stimulate collagen growth from the inside. Thicker collagen means a more substantive dermis, which, of course, supports the epidermis.

One of the most important elements of a skin program is eating a varied and balanced diet, with at least five servings of fresh fruits and vegetables. For extra protec-

tion, and to bolster blood vessels and capillaries, one should consider taking food supplements of Pycnogenol and other antioxidant nutrients.

Proven Safety

Pycnogenol is nontoxic, nonmutagenic, noncarcinogenic and nonteratogenic (Yu, C.L. and Swaminathan, B., "Mutagenicity of proanthocyanids," *Food Chem. Toxicol* 25 (2), 135-9, 1987; Laparra, J. et al., *Acta Therapeutica* 4:233, 1978; Volkner, W. and Muller, E., "Micronucleus assay in bone marrow cells of the mouse with Pycnogenol," Cytotest Cell Research GmbH & Co., projects 143 10 & 143021, February 1989; Acute and chronic toxicity tests. International Bio-Research, Inc., Hanover, Germany).

Pycnogenol has been widely used in Europe as an OTC remedy for more than 30 years, and has been available in the U.S. as a nutrient since 1982. Millions of Pycnogenol capsules are taken daily worldwide with no reports of adverse effects.

Beyond its daily use track record, the nutrient has been tested and tested again according to the conventional safety standards at several prestigious centers, including the Pasteur Institute in Lyon, France and the Cytotest Cell Research (CCR), Darmstadt, Germany (Pantaleoni, G.C., Quanglino, D., University of Aquila Pharmacological Toxicologica Report).

Pycnogenol and Skin

The bottom line, for those of us in the cosmetic industry, is this: Pycnogenol is an extremely effective nutrient, that when properly used in high enough concentrations, can greatly benefit the cosmetic consumers' skin. It builds strong capillaries, helps prevent UVB radiation damage and aids vitamin C in rebuilding collagen. It reduces inflammation and expedites the removal of waste from the dermis and epidermis. As its molecular structure is much smaller than that of vitamins E and C, it penetrates much more readily through the epidermis into the dermis. It is water soluble. And, most important of all, it is safe.

Whether used in a cream or taken as a nutrient, the implications for usage are clear. Pycnogenol's history points to its high efficacy as a cosmetic ingredient. ●

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Super Antioxidants

Pycnogenol(tm) vs Grape Seed Extract Proanthocyanidin

by Clark Hansen, N.D.

The following is a response to some **misinformation** being reported by distributors of Kaire **International** regarding **Pycnogenol(tm)**, a Proanthocyanidin extract of pine bark, in comparison to Proanthocyanidin extracted **from** grape seeds.

MYTH #1) The Food Supplement Industry is unscrupulous to make a buck, selling grape seed extract as "Pycnogenol" which is a trade marked name for pine bark extract proanthocyanidin.

Truth: Jacques Masquelier coined the word Pycnogenol to describe an entire class of bioflavonoids that are composed of polyphenols, or Proanthocyanidin complexes, also referred to as Oligomeric Proanthocyanidin Complexes (**OPCs**). Masquelier patented a process to extract Proanthocyanidin from both pine bark in 1951, and grape seeds in 1970. The name Pycnogenol, was intended as a scientific name for this class of bioflavonoids, whether extracted **from** pine bark, lemon tree bark, grape seeds, grape skins, or **cranberries**, etc. To use it as a tradename for Proanthocyanidin extracted only **from** pine bark is like using the name Tocopherol, the scientific name for Vitamin E, as a trademark only for Vitamin E extracted from soybeans, and prohibiting its **rightful** scientific use in, describing the Vitamin E extracted **from** wheat **germ**, or sunflower seed, etc. The use of the name Pycnogenol is currently being contested on these grounds in court.

MYTH #2) All Proanthocyanidins are not created equal — every plant is chemically and genetically different.

Truth: Proanthocyanidins are virtually identical whether they come **from** pine bark, grape seeds, lemon tree bark, cranberries, or hazel nut tree leaves. The difference is in the varying concentration in the different plants. Grape Seed Extract Proanthocyanidin yields a 95 % concentration, the highest concentration of any known source, which is 10% higher than the yield obtained **from** pine bark.

MYTH #3) Horphag Research Ltd., & Jacques Masquelier had two **consecutive** contracts, **from** 1969 - 1989. (Since Horphag produces Proanthocyanidin only from pine **bark**, this implies that Dr. Masquelier considered pine bark extract to be superior to grape seed extract.)

Truth: In 1991, **after** Dr. Masquelier **left** Horphag, he said,

"**OPC** extracted **from** pine bark is based on a patent which was deposited in 1951 in France (French patent no, 1036922 / date: 9 - 05 - 51; inventor: J. Masquelier). **OPC** extracted **from** grape pips is based on a patent which was deposited in 1970 (French Patent no. 2092743; inventors: J. Masquelier and J. Michaud)

The enormous scientific progress which **occurred** during the 20 years which separate these two inventions, laid the basis for the **very** exacting chemical, biological and clinical research **performed** with **OPC from** grape pip's.

The reason **OPC** from grape pips was favored over **OPC from** pine bark is the following: To establish and demonstrate the bioavailability of **OPC** it is necessary to give the **OPC** an isotopic marking (¹⁴C) - This

marking is accomplished by the plant being cultivated in an atmosphere which contains "14" marked CO₂ microphytotron. " It is self-evident that, due to its limited dimensions, only the grapevine can be used for this type of experiment.

Thus, all the research performed with isotopic marking was based on the marking of grape vines. The results of this research show OPCs ways of activity its specific affinity for collagen and the duration of its fixation to living tissue.

All these tests were necessary because OPC from grape pips is marketed in France as a pharmaceutical product. From 1972 to 1978 intensive analytical, toxicological, pharmacological and clinical studies have been performed with OPC from grape pips to obtain authorization to market the extract as a medicine. The "grape pip" results have been extrapolated to "pine bark."

I underline that in 1986 I discovered that OPC from grape pips has an intense free radical scavenging effect (FRSE) on radical oxygen species. These discoveries were laid down in my U.S. Patent (no 4698,360) of Oct. 6, 1987; "Radical Scavenging Effect of Proanthocyanidins". All FRSE tests were performed with OPC manufactured by SARPAP Ysofme. The tests showed that in this respect, OPC from grape pips has an advantage over OPC from Pine bark. OPC from grape pips contains the Gallic esters of proanthocyanidins (in particular: Proanthocyanidin B2-3'-O-gallate) . These proanthocyanidins - esters have been recently described as the most active substances in the battle against free radicals. "October 1991; Martillac, France, (Procyanidines de France/3)

MYTH #4) Pycnogenol has been shown to prevent LDL oxidation and to have a protective action against WB radiation. The same cannot be stated of Grape Seed Extract.

Truth: As described directly above in response to statement three, Grape Seed Extract has been shown to possess an even more potent antioxidant than Pycnogenol(tm). Any biochemist and all of the researchers studying Proanthocyanidin bioflavanoids will tell you that as a class, the Proanthocyanidin bioflavanoids, regardless of their source, possess the same biochemical activity, with only slight variations. As stated above, all of research using isotopic marking of Proanthocyanidin, showing its "ways of activity, its specific affinity for collagen and the duration of its fixation to living tissue," was performed on grape vines and has been extrapolated to Pycnogenol". Likewise, research studying the ability of Proanthocyanidin extracted from pine bark to prevent oxidation of LDL Cholesterol or oxidative damage from WB radiation, can be extrapolated to Proanthocyanidin extracted from grape seeds.

MYTH #5) Pycnogenol decreases histamine activity and allergic reactions. There is no demonstration of this effect in Grape Seed Extract.

Truth: In June 1981; Pierre Agache published the results of a study he conducted at the Clinique Dermatologique, in Besancon, France, which impressively demonstrated the inhibition of histamine induced hives by oral administration of Endotelon, a 95% Proanthocyanidin Grape Seed Extract. (La Vie medicale 16 - 1981 June 11)

MYTH #6) Grape seeds are heavily exposed to pesticides, fungicides and insecticides, while the maritime pine trees from which Pycnogenol(tm) is extracted are known in a chemical free environment along the Atlantic coast of France.

Truth: Grapes are consumed throughout the world and inspected regularly in the U.S. to make certain that they do not contain harmful residues. The Atlantic coast of France is not a "chemical free" environment. The

pine trees that grow along the coast are not protected from air pollution or oil spills which do occur off the coast of France.

MYTH #7) Grape Seed Extract uses several solvents which leave residues in the **finished** product.

Truth: The extraction process of Proanthocyanidins from grape seeds removes this concern. This is insured by the regular monitoring of sophisticated scientific equipment following stringent standards of purity and quality assurance. Every batch of Grape Seed Extract is certified **free** of any chemical residues.

MYTH #8) Pycnogenol(tm) is processed **fresh** only hours after the bark is removed **from** the trees. This assures the highest quality of the extract and avoids any biological degradation or **fermentation**.

Truth: Grape **Seed** Extract is likewise processed before the seeds degrade or ferment.

MYTH #9) The recommended therapeutic dose in France is a 150 mg compared to only 25mg of Pycnogenol'. This results **in** the use of approximately six times more Grape Seed Extract, which makes it far more expensive to use than Pycnogenol (tm).

Truth: Although most Pycnogenol is sold in 20 mg capsules **in** the U.S., doctors who are recommending it to their patients will tell you that they get the best results when they recommend a dose of 20 mg per every **20** lbs of body weight, or approximately 150 - 200 mg per day. That is the precisely the same dose that is recommended in France for the Grape Seed Extract.

MYTH #10) In France, Grape Seed Extract has been taken off the list of reimbursable medicines, **Pycnogenol(tm)** has not.

Truth: Grape Seed Extract has most **certainly** not been taken off the list of reimbursable medicines in France. As a matter of fact, in France, where both pine bark extract and grape seed extract have been used for decades, the grape seed extract outsells the pine bark by 400%.

MYTH #11) Horphag Research, Ltd. has spent millions of dollars over the past 25 years thoroughly researching & studying **Pycnogenol(tm)** to the point that today there is elaborate safety & **efficiency** data on file to support the product.

Truth: As mentioned previously, the size of pine trees prohibited much of the research from being **performed** on pine trees. As stated by Dr. **Masquelier**,

“It is self-evident that, due to its limited dimensions, only the grape vine can be used for this type of **experiment**.”

Thus, all the research performed with isotopic marking was based on the marking of grape vines. The results of this research show **OPC's** ways of activity its specific affinity for collagen and the duration of its fixation to living tissue.

All these tests were necessary because OPC from grape pips is marketed as a pharmaceutical product. From 1972 to 1978 intensive analytical, toxicological, pharmacological and clinical studies have been **performed** with OPC from grape pips to obtain authorization to market the extract as a medicine. The “grape pip” results have been extrapolated to pine bark.”

MYTH #12) Pycnogenol(tm) has been shown by accepted toxicological protocols to be totally non-toxic, non-mutagenic, and non-teratogenic.

Truth: The same is true of Grape Seed Extract. In fact, Grape Seed Extract has actually been shown to be anti-mutagenic, anti-carcinogenic, and devoid of any toxic effect even at extraordinarily high doses (132 mg 1 lb body weight 1 day for 12 months in dogs). Grape Seed Extract has also been shown to be safe for conception, pregnant women & the unborn fetus, and to be devoid of any peri- or postnatal toxicity.

MYTH #13) Both Harphag, Research, Ltd. and MW, Intl carry product liability for Pycnogenol(tm)

Truth: Indena, the 70 year old Italian herbal pharmaceutical company that produces most of the world's Grape Seed Extract Proanthocyanidin, carries millions of dollars in product liability.

MYTH #14) Recent scientific research suggests that the protective benefits for grapes are clearly shown to be from red grapes, not the seeds of any grapes. Early research conducted on grapes used only seeds from red grapes. Commercially available product today is taken from white grapes.

Truth: Recent research has confirmed what earlier studies had shown, that both the seeds of grapes as well as the skins contain proanthocyanidin, which is the molecule responsible for the protective and healing benefits. Proanthocyanidin is a specific class of bioflavonoids found in a wide number of plants, including purple, red and white grapes, as well as pine bark, lemon tree bark, hazel nut tree leaves, blue berries, cherries, cranberries and others. The most concentrated of these is the seeds of purple grapes. Proanthocyanidin bioflavonoids act virtually the same, regardless of the source. However, the therapeutic benefit has been shown to be dose dependent. Therefore, the product with the highest concentration can provide the greatest therapeutic benefit. Think of it this way, if you were given the option of buying one of two gold bars each weighing 16 ounces, which would you choose. The one with an 85 % concentration of gold, extracted from the coast of France, or the one with a 95% concentration of gold, extracted from vineyards across Italy and France?

MYTH #15) Pycnogenol has been shown to be a powerful antioxidant many times more potent than Vitamin C or E. The same cannot be assumed about white grape seed.

Truth: Indena's Grape Seed Extract has been shown to be 20 times more potent than Vitamin C and 50 times more potent than Vitamin E.

MYTH #16) Although Grape Seed Extract suppliers tend to mention U.S. patent 4,698,360 due to its mention of the Free Radical Scavenging Effect (FRSE) of Proanthocyanidin, the patent clearly emphasizes the extraction of pine bark and not just any plant with Proanthocyanidin content.

Truth: As mentioned earlier, in 1991, after Jacques Masquelier had terminated his contract with Harphag Research, Ltd., he sought to clarify this point by stating, "I underline that in 1986 I discovered that OPC from grape pips has an intense free radical scavenging effect (FRSE) on radical oxygen species. These discoveries were laid down in my U.S. Patent (no 4,698,360) of Oct. 6, 1987; "Radical Scavenging Effect of Proanthocyanidins". All FRSE tests were performed with OPC manufactured by SARPAP-Ysofme. The tests showed that in this respect, OPC from grape pips has an advantage over OPC from Pine bark. OPC from grape pips contains the gallic esters of proanthocyanidins (in particular Proanthocyanidin B2 - 3'4'-O-gallate). These proanthocyanidins - esters have been recently described as the most active substances in the battle against free radicals."

MYTH #17) In addition to its high level of water soluble Proanthocyanidin content, we know of approximately 40 different components in **Pycnogenol(tm)** that directly contribute to its diverse benefit and value. Several key components of **Pycnogenol(tm)** are organic acids: caffeic acids, cinamic acid and ferulic acid, to name just a few, that either are not contained in Grape Seed Extract or are found in a much lower level.

Truth: Proanthocyanidin has been shown to be the active principle that makes both pine bark and Grape Seed Extract so effective as an antioxidant and collagen & elastin protector. All of the known benefits for both products can be attributed to one of these two actions. The other elements in the pine bark and the grape seeds give synergistic and supporting action. If they provide unique individual benefits of their own, this has yet to be demonstrated.

MYTH #18) No other product has the combined qualities that make **Pycnogenol(tm)** so effective and powerful, yet there are companies in the U.S. who claim that Grape Seed Extract is Pycnogenol. Therefore, let the **buyer** beware. Be sure that you are using the real stuff

Truth: **Pycnogenol(tm)** has an 85% concentration of Proanthocyanidin, the active molecule that makes it effective and powerful. Grape Seed Extract has a 95 % concentration of the very same Proanthocyanidin bioflavonoids. The two extracts are nearly identical, except that Grape Seed Extract has more of the active principle. Both products produce incredible results as testimonials for both indicate. The name has become a matter of contention as many scientists feel that Pycnogenol is a scientific term and should therefore not be used as a trademark.

As a doctor and a scientist I have investigated both thoroughly and have been impressed by both. From the published literature and the empirical data of hundreds of my own patients as well as the testimonials of others, both the pine bark and the grape seed extract appear to produce the same results. However, Grape Seed Extract has a 10% higher concentration of Proanthocyanidin, contains a more potent antioxidant, is more abundant, easier to grow, easier to harvest, and less expensive, For all of these reasons have chosen to use Grape Seed Extract Proanthocyanidin manufactured by **Indena** and have had remarkable success. When all of the facts are considered without bias, Grape Seed Extract is the obvious choice.

MYTH #19) The word **Pycnogenol(tm)** is a patented name and should be used only in conjunction with the Maritime extract.

Truth: The name Pycnogenol, recommended by Masquelier in 1979 to describe the unique class of bioflavonoids composed of oligomeres (Combinations of 2, 3, or 4 molecules) of Catechin and Epicatechin has not gained general acceptance. The name that has become accepted is Proanthocyanidin This is the technical term that is now being used by scientists around the world who are continuing research on this incredible class of bioflavonoids. For this reason I also prefer to use the name Proanthocyanidin.

Sincerely yours,

Clark Hansen, N.D.

For information for getting this Super Antioxidant Leave me E-Mail by

clicking on below address: I am James Newman not Dr. Hansen. This is just his letter I received.