

No Industry Standard for Proanthocyanidins

Consumers need to know there is no American industry standard for accurately identifying and quantifying dietary supplements sold as proanthocyanidins (or, procyanidins). The result is widespread confusion and misunderstanding. Suppliers of grape seed and pine bark extracts use various and unproven manufacturing processes so there are widespread differences in the products.

A review of research studies reveals the problem is enormous. Comparative analyses conducted at the University of British Columbia found commercially-produced proanthocyanidins “differed substantially... shown to be only 7.2% similar... raising questions about its quantification in units of [antioxidant] activity” and confirming there is no standard for proanthocyanidins in the marketplace.

Large molecule (6+) Proanthocyanidins (tannins)	Small molecule (2-5) Proanthocyanidins	Singles (1) Flavan-3-ol
<ul style="list-style-type: none">· Anti-nutritive· Unsafe in large doses· Used in manufacturing eco-friendly plastics, adhesives and resins, and tanning leather	<ul style="list-style-type: none">· Strengthens collagen· Improves circulation· Reduces inflammation· Terminates free radicals· Protects cells from oxidation	<ul style="list-style-type: none">· Non-nutritive when removed from their small-molecule (2-5) partners

Most producers of grape seed extracts and pine bark extracts leave the large proanthocyanidin molecules (tannins) in their products in order to bulk up the weight and then allow the consumer to wrongly believe they are consuming small molecule (oligomeric) proanthocyanidins (or, OPCs).

Another problem appears where only single complexes are used. A published study discovered certain commercially-produced proanthocyanidins were totally ineffective because they were comprised of exclusively *single* complexes rather than *small-cluster* complexes of proanthocyanidins.

Unfortunately, because there is no industry standard and therefore absolutely no verification process, there is as much confusion as there are commercial opportunists in this category.

THE ORIGINAL AND ONLY TRUE STANDARD for Proanthocyanidins Since 1950

More than 65 years of solid scientific research, patents and clinical studies, rigorous manufacturing controls and comprehensive identity-testing safeguard the quality and consistency of Flavay®.

Patented Manufacturing Processes
Authenticity · Purity · Effectiveness

Flavay® is the name you can trust for the original, patented and perfected, pure and unadulterated, small-cluster oligomeric proanthocyanidins complex manufactured in France where it has been validated by the French Ministry of Health and approved for over-the-counter use since 1950.

Flavay.com

Call: 210-481-0067 or 1-800-200-1203

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molecular composition



The Complex Molecular Composition of Flavay®

Unlike single-molecule nutrients, the molecules in Flavay® are very complex and require specialized knowledge and technology in order to be accurately identified and quantified.

In the huge and very diverse category of 20,000 flavonoids (and its much larger parent category, polyphenols), only the specific group of molecules in Flavay® are found to bind to collagen proteins and make vessels stronger.

Flavay® is Not a Bioflavonoid

Bioflavonoids do not bind to collagen proteins. Bioflavonoids are made of a different species of molecule known as “flavonols” (note the “o”).

Flavay® is Unique

Flavay® consists of molecules known as “flavanols” (note the “a”)—and only in a highly specific form. Flavay® consists of organic groups of one flavanol molecule bound together in groups of three, known as “flavan-3-ols” which are combined into small complexes of two, three, four and five (but no larger), and retained in their naturally-occurring acid nutrients.

Only the specific small complexes of flavan-3-ol molecules in Flavay® bind to collagen proteins and make vessels stronger.

Greater than the sum of its parts.

The science of manufacturing Flavay® is very complex. Where the single flavan-3-ol molecular groups are highly beneficial, the same molecules are nonnutritive when isolated from their natural partners. So, organic groups of single and small-clusters of specific molecules are selectively preserved while antinutritive large-clusters of molecules are removed. Organic acids are retained to preserve bioactivity in the otherwise highly-perishable molecular complexes.

Only the specific small complexes of flavan-3-ol molecules in Flavay® bind to collagen proteins and make vessels stronger.

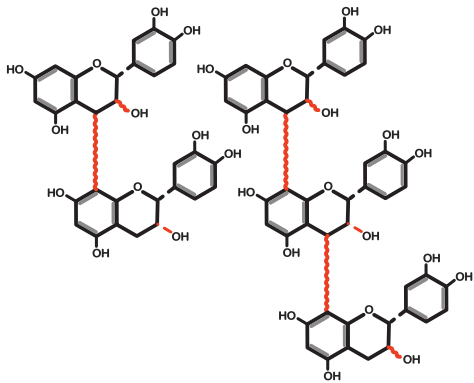
small molecular size is important

Only *Small* Proanthocyanidins are Safe and Effective

Oligo means few or small. Only the small (2-5) clusters of molecules are small enough to fit between collagen fibrils and gently protect delicate tissues. (Clusters of 6+ are too large and their affinity for proteins is too strong to be healthful.)

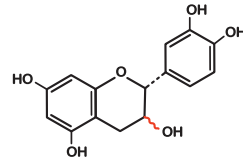
OPCs

oligomeric proanthocyanidins are clusters of dimers (2), trimers (3), tetramers (4) and/or pentamers (5)



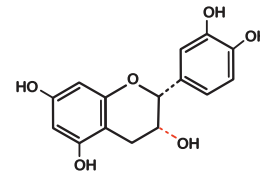
Catechin (single)

the single flavanol after it irreversibly became a single catechin (not bonded as OPCs)



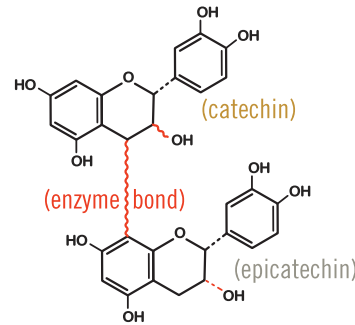
Epicatechin (single)

the single flavanol after it irreversibly became a single epicatechin (not bonded as OPCs)



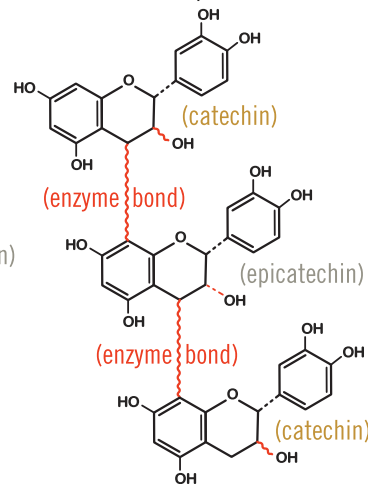
Dimer (2)

two irreversibly bonded catechins and/or epicatechins



Trimer (3)

three irreversibly bonded catechins and/or epicatechins



Only in Flavy® are the Large Molecules Removed

Flavy® is uniquely formulated to remove large, antinutritive proanthocyanidins. Flavy® consists of only the small organic clusters of monomers (1), dimers (2), trimers (3), tetramers (4) and pentamers (5)—and no larger.

Organic Acids

Flavy® retains small amounts of other substances called organic acids, including caffeic acid, cinnamic acid, fumaric acid, gallic acid, vanillic acid, ferulic acid, protocatechuic acid, taxifolin, resveratrol and related substances. These "minor" organic acids significantly contribute to the beneficial effects of Flavy®.

Large Proanthocyanidins (Clusters of 6+ Molecules) are Ineffective, Unsafe and Antinutritive

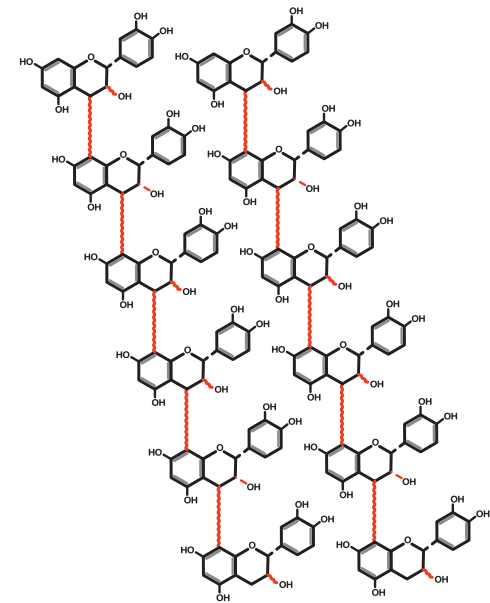
Large proanthocyanidins also bind to collagen proteins. But the large clusters of molecules (6+) are so powerful that they crush where the small clusters (2-5) gently stay in check with the delicacy of the tissues they protect. The large proanthocyanidin molecules cannot pass the intestinal tract into the blood because they are too large to fit between collagen fibrils and unable to repair decayed collagen.

Large proanthocyanidins are antinutritive because they bind to dietary fiber or proteins and prevent absorption of useful nutrients.

Large proanthocyanidins are antinutritive.

Proanthocyanidins

polymeric proanthocyanidins are clusters of hexamers (6) or more, also known as *tannins*



Large proanthocyanidins are known as "tannins" and were traditionally used for tanning leather before natural tanning materials were replaced by chemicals. Today, large proanthocyanidins are used in production of eco-friendly plastics, resins and adhesives.

Flavy® is a unique formulation of singles and small proanthocyanidins retained in their naturally-occurring acid nutrients, and has been awarded many patents for manufacturing and for vascular protection since 1948.