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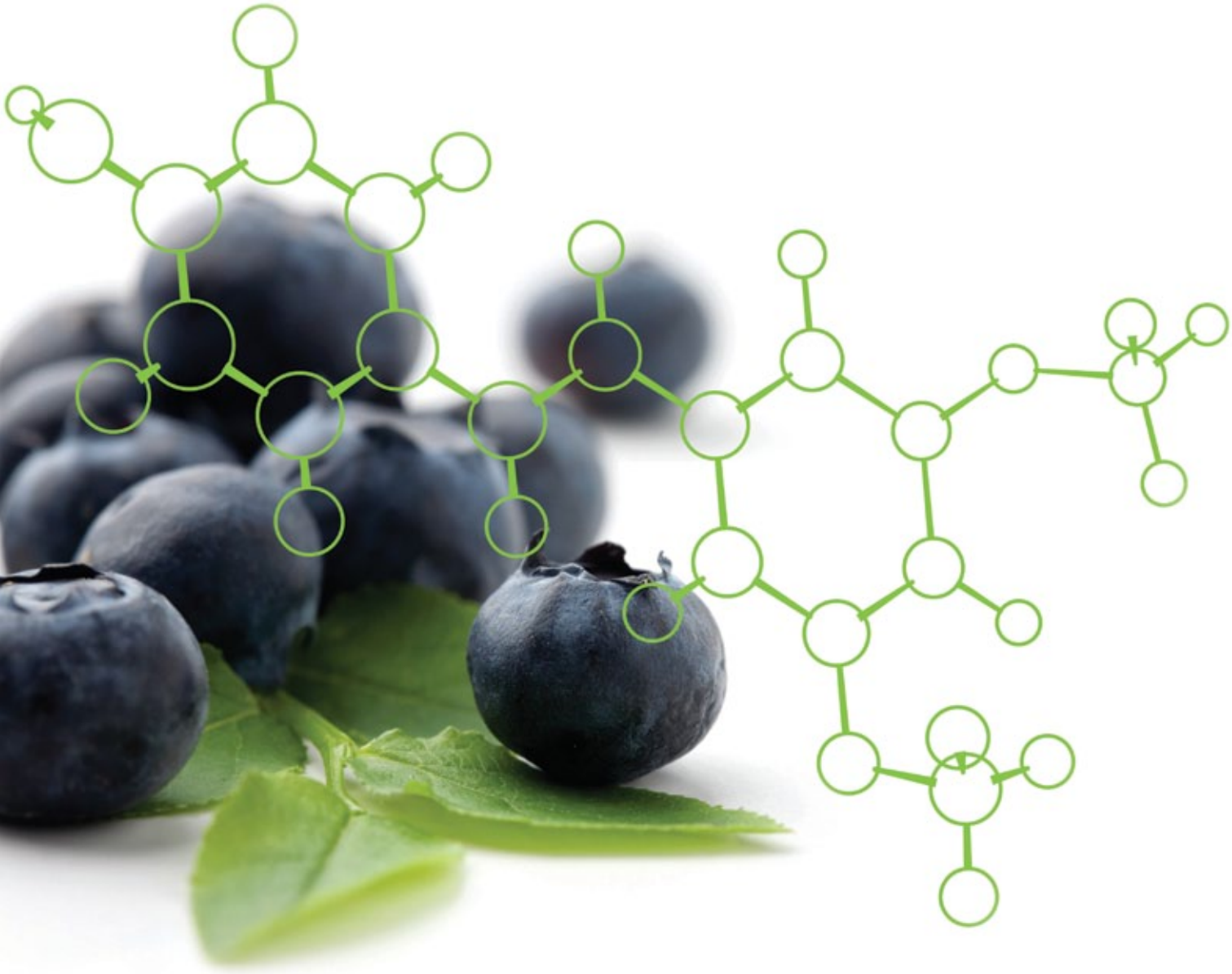
pTeroPure™

Pterostilbene (tero-STILL-bean)



99% Pure trans-Pterostilbene

pTeroPure is a nature identical form of trans-Pterostilbene

Introduction

pTeroPure will promote health and well-being through the discovery and development of nutraceutical ingredients - naturally occurring molecules that can be integrated into dietary supplements, nutritional products and functional foods.

Like resveratrol, pterostilbene (tero-STILL-bean) belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. Pterostilbene and resveratrol have very similar pharmacologic properties, however Pterostilbene has several key advantages over resveratrol.[1,6] Pterostilbene is one of several stilbenes found in certain berries (e.g., blueberries, cranberries, sparkleberries, lingonberries, and grapes), thus, consumption of these small fruits may help improve health.[1,4]

pTeroPure is a nature identical form of trans-Pterostilbene. Pterostilbene is the next generation of resveratrol:

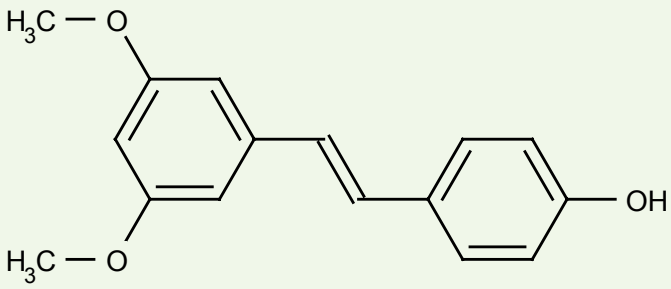
- a methylated resveratrol analog naturally found in berries
- superior biological activity
- better oral bioavailability
- metabolizes more slowly in the body, allowing more time for its antioxidant activities to act

"The more we study Pterostilbene, the more we see its huge potential in the human health field."

-Dr. Agnes Rimando, USDA ARS[1]

Phytochemical Profile of Pterostilbene

Structure



CAS#:	537-42-8
Molecular Weight:	256.299
Molecular Formula:	$C_{16}H_{16}O_3$

Other Names:

Methylated Resveratrol
Dimethoxyresveratrol
3',5'-Dimethoxy-4-stilbenol
3,5-Dimethoxy-4'-hydroxy-trans-stilbene
4-(2-(3,5-Dimethoxyphenyl)ethenyl)phenol

pTeroPure Pterostilbene is 99% pure and is one of the highest purity ingredients available in the market today.

Why is Pterostilbene better than Resveratrol

Pterostilbene(methylated resveratrol) has greatly improved oral adsorption and metabolic stability. The enhanced activity of Pterostilbene compared to resveratrol may, in part, be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has improved lipophilicity and a higher potential for cellular uptake than resveratrol, which has three hydroxyl groups.[3]

Several published studies refer to Pterostilbene as having better activity than resveratrol. For example, the result of one study indicates that pterostilbene is more effective than resveratrol as an inhibitor of DNA synthesis in the human adenocarcinoma HT-29 cell line.[3] Additionally, Rimando et al. have shown that unlike the related stilbenes resveratrol, piceatannol, or resveratrol trimethylether, Pterostilbene is a potent peroxisome proliferator-activated receptor alpha agonist, lowering lipid levels in the blood stream at higher rate than even ciprofibrate.[7]

How Pterostilbene and Resveratrol Work Together

Pterostilbene and resveratrol, both stilbene compounds, have very similar pharmacologic properties, but published data suggests that they act very differently. All of the bioassay and animal data, as summarized above, suggests that Pterostilbene is the most potent stilbene, following a different mechanism of action than resveratrol. However, researchers have suggested that these two compounds also work synergistically, supporting the theory that a combination of Pterostilbene and resveratrol in a formulation maybe more effective than using these ingredients seperately.

Potential Health Benefits of Pterostilbene

- Strong antioxidant[6]
- May be a potent anti-aging compound.[6]
- Potent anti-inflammatory activity[6]
- Prevents neuro-degeneration[6]
- Prevents damage of oxidative stress.[6]
- Mimics calorie restriction
- Improves heart health[1]
- Can be used to maintain healthy cholesterol levels.[1,2]
- Orally active and works to decrease plasma glucose levels in some animals.[8]
- Identified as an antiviral compound with broad target specificity.[2]
- Inhibits expression of certain inflammation-related genes in the colon.[3]
- Potential for cancer chemo-prevention.[3]

"Pterostilbene showed strong inhibitory activity - much more than resveratrol - against a particular form of cytochrome P450."

-Dr. Agnes Rimando, USDA ARS[1]

pTeroPure is the next generation Resveratrol

What is the Significance of Sirtuin

The sirtuins are a family of seven enzymes (SIRT1-7) with the potential to protect against diseases such as hypertension and cancer. David Sinclair, Ph.D., Harvard Medical School, and Leonard Guarente, Ph.D., Massachusetts Institute of Technology, found that calorie restriction activates SIRT1, one of the key enzymes of the sirtuin family. Both Pterostilbene and Resveratrol improve mitochondrial function and protect against metabolic disease by activating SIRT1 and mimicking calorie restriction.

Potential Areas of Interests for Sirtuins	
SIRT1	Metabolic, neurological, mitochondrial, cancer, inflammation
SIRT2	Cancer, neurological, metabolic
SIRT3	Metabolic, mitochondrial, neurological, cardiovascular
SIRT4	Metabolic, mitochondrial
SIRT5	Metabolic
SIRT6	Inflammation, cancer, metabolic
SIRT7	Cardiovascular, metabolic

pTeroPure Pterostilbene Ordering Information

Description	Part No.	1kg+	5kg+	10kg+	25kg+	100kg+
pTeroPure Pterostilbene Food Grade	00016996-101		Call for Pricing			

*Prices are quoted in US Dollar per Kg and are subject to change without notice.

Sample pTeroPure Pterostilbene Certificate of Analysis

pTeroPure™

Certificate of Analysis

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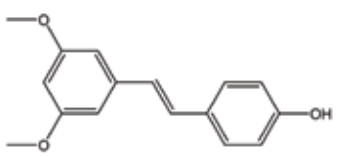
PRODUCT	Pterostilbene
PART NUMBER	00016996
MATERIAL TYPE	Food Grade Bulk Material
LOT NUMBER	XXXXXX
REPORT NUMBER	XXXXXX
DATE OF SAMPLE	01/06/20XX
DATE OF REPORT	01/18/20XX

Structure



NAME	Pterostilbene
OTHER NAME	4-(2-(3,5-Dimethoxyphenyl)ethenyl)phenol; 3,5-Dimethoxy-4'-hydroxy-trans-stilbene; 3',5'-Dimethoxy-4-stilbenol
CHEMICAL FORMULA	$C_{16}H_{16}O_3$
MOLECULAR WEIGHT (MW)	256.30
PUBLISHED MELTING POINT	85-86 °C
CAS NUMBER	[537-42-8]
CHEMICAL FAMILY	Stilbenoids

MANUFACTURER ASSAY

TEST	METHOD	SPECIFICATION	RESULT
HPLC	NA	NLT 99.0%	99.81%
Loss on Drying	NA	NMT 2.0%	0.1%
Heavy Metals	ICP	See Below	See Below
Lead	ICP	NMT 1 ppm	Conforms
Arsenic	ICP	NMT 1 ppm	Conforms
Cadmium	ICP	NMT 1 ppm	Conforms
Mercury	ICP	NMT 1 ppm	Conforms
Total Plate Count	MICRO	NMT 1000 CFU/g	Conforms
Yeast and Mold	MICRO	NMT 100 CFU/g	Conforms
Salmonella	MICRO	NEGATIVE	NEGATIVE
E. Coli	MICRO	NEGATIVE	NEGATIVE
Staphylococcus	MICRO	NEGATIVE	NEGATIVE
Pseudomonas aeruginosa	MICRO	NEGATIVE	NEGATIVE
Appearance	NA	Off-white to Light brown	Pale Yellow Powder

STORAGE CONDITIONS

STORAGE	Room Temperature in a dry place.
EXPIRATION DATE	01/20XX under the above conditions.

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Intellectual Property

pTeroPure is a licensee of two U.S. patents from the USDA-ARS and the University of Mississippi and is working on the third patent with a strategic partner.

Patent Pending #1: "Pterostilbene as a New Agonist for the Peroxisome Proliferator-Activated Receptor Alpha Isoform."

Patent Pending #2: "Method to Ameliorate Oxidative Stress and Improve Working Memory via Pterostilbene Administration."

Patent Pending #3: "A Key Intermediate for the Preparation of Stilbenes"

The pterostilbene products developed by pTeroPure will be based on the technologies licensed from the USDA ARS and the University of Mississippi.

References

Below are the references cited in this brochure. Please contact us for a more complete list of references for Pterostilbene.

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FDA disclaimer: **These statements have not been fully evaluated by the FDA and are not intended to prevent, treat, mitigate or cure any disease condition.**

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