A high purity, nature-identical form of trans-Resveratrol
Introduction

ChromaDex promotes 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 its cousin Pterostilbene, Resveratrol is a phytoalexin that is naturally produced by grapes, blueberries and Japanese knotweed (Polygonum cuspidatum) when under attack by pathogens such as bacteria or fungi. Resveratrol has received significant research interest for various health benefits. With all of the attention, consumer products advertising the health benefits of resveratrol have flooded the market. These products contain resveratrol in a variety of forms ranging from crude extracts to the purified compound.

Uses and Benefits of Resveratrol

Potential Health Benefits:

• Anti-aging by inhibiting gene expression profiles associated with age-related illnesses
• Anti-inflammatory by reducing both acute and chronic chemically induced edema
• May prevent carcinogenesis by inhibiting cyclooxygenase (COX) and angiogenesis
• May limit the effects of a stroke by protecting against brain damage following cerebral ischemia
• Antioxidant - Resveratrol is a potent antioxidant
• Mimics calorie restriction
• Heart health - Resveratrol improves heart health
• Neuro-degeneration - Helps limit the oxidative damage known to cause neuro-degeneration and cognitive decline
Phytochemical Profile of Resveratrol

CAS#: 501-36-0
Molecular Weight: 228.25
Molecular Formula: C_{14}H_{12}O_{3}
Other Names: 1-(3,5-Dihydroxyphenyl)-2-(4-hydroxyphenyl) ethylene
3,4',5-Stilbenetriol; 5-[2-(4-Hydroxyphenyl) ethenyl]-1,3-benzenediol
3,4',5-Trihydroxystilbene
trans-Resveratrol

Difference Between High Purity Resveratrol and an Extract

High Purity:
• Quality and composition can be assured
• Well-defined formula ingredient that is the basis for the majority of the scientific research investigating the health benefits

Extract:
• Quality and composition vary
• Health benefits are difficult to interpret
• May contain toxic anthraquinones that cause digestive disease

Many consumer products contain grape skin or Japanese knotweed extracts that are standardized to 50% resveratrol. Extracts, even if standardized, remain as crude ingredients. The quality and composition vary. Because of that variation and inconsistency in composition, studies of crude extracts are difficult to interpret for health benefits. Highly purified resveratrol, by contrast, is well-defined and is the basis for the majority of the scientific research investigating the health benefits. For that reason, pTeroPure supplies resveratrol at greater than 97% purity so the quality and composition are assured.
Sample Resveratrol Certificate of Analysis

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>Resveratrol</th>
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<tbody>
<tr>
<td>PART NUMBER</td>
<td>00018089</td>
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<tr>
<td>STANDARD TYPE</td>
<td>Food Grade (FG)</td>
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<td>DATE OF SAMPLE</td>
<td>02/05/20XX</td>
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<tr>
<td>DATE OF REPORT</td>
<td>02/17/20XX</td>
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NAME | Resveratrol

OTHER NAME 1-(3,5-Dihydroxyphenyl)-2-(4-hydroxyphenyl)ethylen; 3,4’,5-Stilbenetriol; 5-[2-(4-Hydroxyphenyl)ethenyl]-1,3-benzenediol; 3,4’,5-Trihydroxystilbene; trans-Resveratrol

CHEMICAL FORMULA | C_{14}H_{12}O_{3}

MOLECULAR WEIGHT (MW) | 228.25

PUBLISHED MELTING POINT | 265-267 °C

CAS NUMBER | [501-36-0]

CHEMICAL FAMILY | Phenolic acids

MANUFACTURER ASSAY

<table>
<thead>
<tr>
<th>TEST</th>
<th>METHOD</th>
<th>SPECIFICATION</th>
<th>RESULT</th>
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<tbody>
<tr>
<td>HPLC</td>
<td>CDXA-CPM-056-00</td>
<td>NA</td>
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<tr>
<td>Loss on Drying</td>
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<td>NMT 3.0%</td>
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<tr>
<td>Heavy Metals</td>
<td>ICP</td>
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<tr>
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<td>ICP</td>
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<td>Below LOQ (&lt;1.0ppm)</td>
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<tr>
<td>Arsenic</td>
<td>ICP</td>
<td>NMT 1 ppm</td>
<td>Below LOQ (&lt;1.0ppm)</td>
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<tr>
<td>Cadmium</td>
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<td>Mercury</td>
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<tr>
<td>Total Plate Count</td>
<td>MICRO</td>
<td>NMT 1000 CFU/g</td>
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<tr>
<td>Yeast and Mold</td>
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<td>NMT 100 CFU/g</td>
<td>&lt;10 CFU/g</td>
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<tr>
<td>Salmonella</td>
<td>MICRO</td>
<td>NEGETIVE</td>
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<tr>
<td>E. Coli</td>
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<tr>
<td>Staphylococcus</td>
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<tr>
<td>Psuedomonas aeruginosa</td>
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<td>Off-white to Light brown</td>
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</tbody>
</table>

STORAGE CONDITIONS

STORAGE | Room Temperature in a dry place.

EXPIRATION DATE | 02/20XX under the above conditions.
References

Anti-Aging

Anti-Inflammatory
Birrell, M. A. et al., Resveratrol, an extract of red wine, inhibits lipopolysaccharide induced airway neutrophilia and inflammatory mediators through an NF- B-independent mechanism. FASEB J. 19, 840–841 (2005).

Carcinogenesis

Ischemia

Comparisons with Pterostilbene
Antioxidant Effect of trans-Resveratrol, Pterostilbene, Quercetin and Their Combinations in Human Erythrocytes In Vitro: R. Mikstacka et al.; Plant Foods Hum Nutr. 65, 57 (2010)