Resveratrol

Related Terms

- Ban-ji-ryun, ban-zhi-lian, banjiryun, *Belamcanda chinensis*, bergenin, betulin, betulinic acid, cis-piceid, cis-resveratrol (cis-3,4,5- trihydroxystilbene), *Cissus quadrangularis*, *Elephantorrhiza goetzei*, epsilon-Viniferin (a dimer of resveratrol), *Erythrophleum lasianthum* (Caesalpinioidae, Leguminosae), flavanoid, French paradox, gnetin H (a resveratrol analog), *Gnetum montanum*, grape seed proanthycyanidin extract (GSPE), grape skin, heyneanol A (a resveratrol tetramer), hydroxystilbene, ko-jo-kon, Liliaceae, lyophilized grape powder (LGP), mangiferonic acid, non-flavanoid polyphenol, *Paeonia lactiflora* Pall. (Paeoniaceae), pallidol, parthenocissine A, phenolic antioxidant, phytoalexin, phytoantitoxin, phytoestrogens, phytohormones, phytostilbene, piceatannol,*Polygonum cuspidatum*, polyphenol, prenylflavanone, protykin, quadrangularin, red wine, red wine polyphenol, RESV, resverol, resveratrol 3-O-beta-D-glucopyranoside, *Reynoutria japonica*, *Scutellaria barbata* D. Don (Lamiaceae), *Sophora moorcroftiana* Benth.,*Sophora tomentosa* L., stilbene, stilbene derivative resveratrol (RES), stilbene polyphenol, stilbenoid, suffruticosol B (a resveratrol analog), trans-3,4',5-trihydroxystilbene, trans-piceid, trans-resveratrol, transhydroxystilbene, tyrphostin, vatdiospyroidol (a resveratrol tetramer), *Vatica pauciflora*, *Vatica rassak* (Dipterocarpaceae), vaticanol C (a resveratrol tetramer), vaticaphenol A, *Veratrum taliense*, viniferin (a resveratrol analog), *Vitis vinifera* L.

Background

- Resveratrol is found in over 70 plant species including nuts, grapes, pine trees, certain vines, and red wine. Some experts believe that resveratrol may be a factor in the French paradox that coronary heart disease mortality in France is lower than other similar industrialized countries due to the frequent consumption of red wine.
- Resveratrol has been shown in animal and laboratory studies to exhibit antioxidant, anticancer, antiproliferative, antifungal, antiviral, and antibacterial effects. However, data in humans is lacking.
- At this time, there is a lack of high quality human trials available supporting the efficacy of resveratrol for any indication. However, there are several observational studies that correlate the consumption of wine with a decrease in cancer and/or cardiovascular disease risk. There are multiple possible contributing factors to these conditions, and studies of resveratrol are difficult to design and implement. Too much

alcohol intake can be dangerous. Further research is needed before a firm recommendation can be made.

Scientific Evidence

Uses *These uses have been tested in humans or animals. Safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified healthcare provider.*	**Grade***
Cancer The effects of resveratrol cannot be adequately assessed from trials using foods, wine, or combination products containing resveratrol and other substances. Well-designed clinical trials of resveratrol alone are needed before a recommendation can be made in regards to cancer prevention and/or treatment.	C
Cardiovascular disease The effects of resveratrol cannot be adequately assessed from trials using foods, wine, or combination products containing resveratrol and other substances. Well-designed clinical trials of resveratrol alone are needed before a recommendation can be made.	C
Longevity/anti-aging Resveratrol has been included in herbal products that are marketed to increase lifespan and prevent aging. Limited evidence shows a possible benefit for this use, but more studies are needed in this area.	C

Gradin
Syster

Tradition/Theory

The below uses are based on tradition, scientific theories, or limited research. They often have not been thoroughly tested in humans, and safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified healthcare provider. There may be other proposed uses that are not listed below.

- Age-related macular degeneration, allergy, Alzheimer's disease, amyloidosis, amyotrophic lateral sclerosis, antifungal, anti-inflammatory, antimicrobial, antioxidant, antiplatelet, anti-tumor agent, antiviral, atherosclerosis, bone density, cancer prevention, cerebral ischemia, chemoprotectant, chronic obstructive pulmonary disease (COPD), cognitive disorders, cosmetic, degenerative diseases, diabetic neuropathy, diabetic wound healing, edema, Epstein-Barr virus, hearing loss, *Helicobacter pylori* infection, herpes simplex virus types 1 and 2, HIV, hormonal imbalances, hypercholesterolemia, immunomodulator, influenza, ischemia-reperfusion injury prevention, leukemia, medulloblastoma, menopausal symptoms, multiple sclerosis, nephrotoxicity, neuroblastoma, neuropathy, neuroprotection, pain, pancreatitis, Parkinson's disease, premature aging, renal impairment (protection), rheumatoid arthritis, seizure, skin disorders, spinal cord injury, stroke, vascular diseases, vasorelaxant, wound healing.

Dosing

The below doses are based on scientific research, publications, traditional use, or expert opinion. Many herbs and supplements have not been thoroughly tested, and safety and effectiveness may not be proven. Brands may be made differently, with variable ingredients, even within the same brand. The below doses may not apply to all products. You should read product labels, and discuss doses with a qualified healthcare provider before starting therapy.

Adults (over 18 years old)

- Insufficient available evidence.

Children (under 18 years old)

- Insufficient available evidence.

Safety

The U.S. Food and Drug Administration does not strictly regulate herbs and supplements. There is no guarantee of strength, purity or safety of products, and effects may vary. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy. Consult a healthcare provider immediately if you experience side effects.

Allergies

- Avoid in individuals with a known allergy/hypersensitivity to resveratrol, grapes, red wine, or red wine polyphenols.
- Allergic contact dermatitis from pentylene glycol in an emollient cream, with possible co-sensitization to resveratrol has been reported.

Side Effects and Warnings

- Limited data in humans reveals that resveratrol seems quite safe. It is usually found as a component in food and beverages.
- There is limited long-term information regarding adverse effects associated with resveratrol supplements alone. The American Heart Association recommends limited consumption. Consumption of large quantities of red wine as a source of resveratrol is considered unsafe due to the alcohol content. Consuming large amounts of alcohol increases the risk of alcoholism, high blood pressure, obesity, stroke, breast cancer, suicide, and accidents. Drinking large quantities of red wine may also have adverse effects on the liver. Preliminary evidence suggests that resveratrol may weakly inhibit the way that the liver breaks down certain drugs, herbs, and supplements (inhibits multiple cytochrome P450 enzymes). Avoid red wine consumption in patients with a history of alcoholism.
- Use cautiously in patients on anticoagulant/antiplatelet (blood thinning) agents due to the potential for increased risk of bleeding.
- Patients on blood pressure medications should take high amounts of resveratrol with caution.

Pregnancy and Breastfeeding

- According to the American College of Obstetricians and Gynecologists, red wine consumption is not recommended in pregnant women, as alcohol may affect the fetus and can lead to life-threatening damage.

Interactions

Most herbs and supplements have not been thoroughly tested for interactions with other herbs, supplements, drugs, or foods. The interactions listed below are based on reports in scientific publications, laboratory experiments, or traditional use. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy.

Interactions with Drugs

- Based on preliminary laboratory study, resveratrol may have additive effects when taken with antifungals, such as nystatin. There may be a protective effect of trans-resveratrol on gentamicin-induced kidney toxicity.
- Laboratory study suggests that resveratrol has anti-aggregating and antithrombin activity and may have additive effects when taken with other drugs with the same actions. Use of resveratrol with antiplatelet drugs like clodipogrel (Plavix®), dipyridamole (Persantine®), non-steroidal anti-inflammatory drugs (NSAIDs), and aspirin or anticoagulant drugs like warfarin (Coumadin®) could cause increased risk of bleeding.
- Resveratrol may increase the effects of some antivirals, including antiretroviral HIV medications.
- Based on laboratory and animal study, the use of resveratrol with antihypertensive/cardiovascular drugs may result in additive effects.
- Based on laboratory study, resveratrol may sensitize or enhance the efficacy of anticancer drugs, such as paclitaxel or actinomycin D.
- Cholesterol levels have been lowered in rats, although the clinical significance is unknown in humans. In theory, resveratrol could increase the effects of cholesterol-lowering drugs such as HMG-CoA reductase inhibitors ("statins") or bile acid sequestering agents (cholestyramine).
- Based on preliminary data, resveratrol may enhance the immune suppression caused by cyclosporine A.
- Drinking large quantities of red wine, which contains resveratrol, may have adverse effects on the liver. Preliminary evidence suggests that resveratrol may weakly inhibit the way that the liver breaks down certain drugs, herbs, and supplements (inhibits multiple cytochrome P450 enzymes).
- Based on resveratrol's chemical structure, which is similar to that of the synthetic estrogen agonist diethylstilbestrol, resveratrol may function as an estrogen agonist and exhibit an additive effect when taken in conjunction with estradiol. However, limited laboratory study has shown resveratrol acting as an estrogen antagonist. Resveratrol may have the potential to act as both an estrogen agonist or antagonist depending on a variety of factors.
- Based on preliminary study, resveratrol may interact with MAOIs such as phenelzine (Nardil®) and tranylcypromine (Parnate®). This effect has not been confirmed in humans.
- Resveratrol may also interact with anti-inflammatory agents, vasorelaxants, neurologic agents, immune enhancing agents or agents that alter blood sugar levels.

Interactions with Herbs and Dietary Supplements

- Based on preliminary laboratory study, resveratrol may have additive effects when taken with antifungal herbs and supplements. There may be a protective effect of trans-resveratrol on gentamicin-induced kidney toxicity.
- Laboratory study suggests that resveratrol has anti-aggregating and antithrombin activity and may have additive effects when taken with other herbs and supplements with the same actions.
- Resveratrol may increase the effects of some antivirals.
- Theoretically, the use of resveratrol with blood pressure-lowering or cardiovascular herbs and supplements may result in additive effects.
- Cholesterol levels have been lowered in rats, although the clinical significance is unknown. In theory, resveratrol could increase the effects of herbs and supplements like garlic, guggul, red rice yeast, or niacin.
- Drinking large quantities of red wine, which contains resveratrol, may have adverse effects on the liver. Preliminary evidence suggests that resveratrol may weakly inhibit the way that the liver breaks down certain herbs and supplements (inhibits multiple cytochrome P450 enzymes).
- Based on resveratrol's chemical structure, resveratrol may function as an estrogen agonist and exhibit an additive effect when taken with estradiol. However, limited laboratory study has shown resveratrol acting as an estrogen antagonist. Resveratrol may have the potential to act as both an estrogen agonist or antagonist depending on a variety of factors.

- Based on preliminary study, resveratrol may interact with MAOIs such as St. John's wort. This effect has not been confirmed in humans.
- Based on laboratory study, resveratrol may increase inhibitory effects on carcinoma cells when combined with quercetin and rutin. Preliminary study also has shown that resveratrol may enhance the growth inhibitory effects of vitamin D.
- Resveratrol may also interact with anti-inflammatory agents, vasorelaxants, neurologic agents, immune enhancing agents or agents that alter blood sugar levels.

Author Information

- This information is based on a systematic review of scientific literature edited and peer-reviewed by contributors to the Natural Standard Research Collaboration (www.naturalstandard.com).

References

Natural Standard developed the above evidence-based information based on a thorough systematic review of the available scientific articles. For comprehensive information about alternative and complementary therapies on the professional level, go to www.naturalstandard.com. Selected references are listed below.

1. Aggarwal BB, Shishodia S. Molecular targets of dietary agents for prevention and therapy of cancer. Biochem Pharmacol 2006 May 14;71(10):1397-421. View Abstract
2. Baur JA, Sinclair DA. Therapeutic potential of resveratrol: the in vivo evidence. Nat Rev Drug Discov 2006 Jun;5(6):493-506. View Abstract
3. Cheong H, Ryu SY, Kim KM. Anti-allergic action of resveratrol and related hydroxystilbenes. Planta Med 1999;65(3):266-268. View Abstract
4. Cruz MN, Luksha L, Logman H, et al. Acute responses to phytoestrogens in small arteries from men with coronary heart disease. Am J Physiol Heart Circ Physiol 2006 May;290(5):H1969-75. View Abstract
5. Delmas D, Lancon A, Colin D, et al. Resveratrol as a chemopreventive agent: a promising molecule for fighting cancer. Curr Drug Targets 2006 Apr;7(4):423-42. View Abstract
6. Gronbaek M, Deis A, Sorensen TI, et al. Mortality associated with moderate intakes of wine, beer, or spirits. BMJ 5-6-1995;310(6988):1165-1169. View Abstract
7. Labinskyy N, Csiszar A, Veress G, et al. Vascular dysfunction in aging: potential effects of resveratrol, an anti-inflammatory phytoestrogen. Curr Med Chem 2006;13(9):989-96. View Abstract
8. Lekakis J, Rallidis LS, Andreadou I, et al. Polyphenolic compounds from red grapes acutely improve endothelial function in patients with coronary heart disease. Eur J Cardiovasc Prev Rehabil 2005 Dec;12(6):596-600. View Abstract
9. Levi F, Pasche C, Lucchini F, et al. Resveratrol and breast cancer risk. Eur.J Cancer Prev 2005;14(2):139-142. View Abstract
10. Rainsford KD. Influenza ("Bird Flu"), inflammation and anti-inflammatory/analgesic drugs. Inflammopharmacology 2006 Mar;14(1-2):2-9.View Abstract
11. Rahman I, Kilty I. Antioxidant therapeutic targets in COPD. Curr Drug Targets 2006 Jun;7(6):707-20. View Abstract
12. Rakici O, Kiziltepe U, Coskun B, et al. Effects of resveratrol on vascular tone and endothelial function of human saphenous vein and internal mammary artery. Int J Cardiol 2005 Nov 2;105(2):209-15. View Abstract
13. Truelsen T, Gronbaek M, Schnohr P, et al. Intake of beer, wine, and spirits and risk of stroke: the Copenhagen city heart study. Stroke 1998;29(12):2467-2472. View Abstract

14. Zern TL, Wood RJ, Greene C, et al. Grape polyphenols exert a cardioprotective effect in pre- and postmenopausal women by lowering plasma lipids and reducing oxidative stress. J Nutr 2005;135(8):1911-1917. View Abstract