

Resveratrol: Does it really work? (Part 1)

Resveratrol is a compound found largely in the skins of red grapes. It has gained a large amount of media attention and has been touted as having many beneficial effects on one's health. Resveratrol is a component of Ko-jo-kon, an oriental medicine used to treat diseases of the blood vessels, heart, and liver. It came to scientific attention during the mid-1990s as a possible explanation for the "French Paradox"—the low incidence of heart disease among the French people, who eat a relatively high-fat diet. Since then, it has been touted by manufacturers and examined by scientific researchers as an antioxidant, an anti-cancer agent, and a phytoestrogen [5]. It has also been advertised on the Internet as "The French Paradox in a bottle."

If one does a search of the literature and looks at well-accepted peer review journals, there is very little published to support any of these highly acclaimed effects of resveratrol. New work produced by both Amgen and Pfizer and cast doubt on the manner in which the health supplement is said to work. Prominent researchers supposed that it worked by activating a certain gene, SIRT1. This activation is thought to produce the benefits of a caloric restriction diet even among those with high fat and high caloric intake. In 2009, Amgen scientists published in a volume of *Chemical Biology and Drug Design*, experimental results that indicate resveratrol does not, in fact, activate SIRT1. Pfizer scientists, in the *Journal of Biological Chemistry* in 2010 offers similar results, showing that resveratrol (and related substances such as SRT1720) do not activate SIRT1 and did not reduce blood sugar in mice fed a high fat diet. Thus, to translate any mice studies into human studies is not possible and it may be that resveratrol doesn't work at all. Despite what is heard on many of the nationally watched television shows on health, none of the claims have been every demonstrated in any valid human study.

While present in other plants, such as eucalyptus, spruce, and lily, and in other foods such as mulberries and peanuts, resveratrol's most abundant natural sources are *Vitis vinifera*, *labrusca*, and muscadine grapes, which are used to make wines. It occurs in the vines, roots, seeds, and stalks, but its highest concentration is in the skin. The resveratrol content of wine is related to the length of time the grape skins are present during the fermentation process. Thus the concentration is significantly higher in red wine than in white wine, because the skins are removed earlier during white-wine production, lessening the amount that is extracted. Grape juice, which is not a fermented beverage, is not a significant source of resveratrol. Since wine is the most notable dietary source, it is the object of much speculation and research. Resveratrol is also available from supplement pills and liquids, in which it is sometimes combined with vitamins and/or other ingredients. It is also an ingredient in topical skin creams. The supplements are generally labeled as containing from 20 to 500 mg per tablet or capsule. However, the purity of these products is unknown. And, because dietary supplements are loosely regulated, it should not be assumed that the labeled dosage is accurate. Stay tuned for part 2 where we will talk about the presumed anti-cancer, anti-aging, and positive effects on the cardiovascular system.