

R.O.S-Quench



Synergistic Super-Antioxidant Formula | VA-121

Key Features:

R.O.S-Quench is a synergistic blend of powerful antioxidants in potent dosages, specifically formulated to strengthen the vasculature, modulate immune function, and reduce inflammation.

- Protects against thrombosis, strengthens arteries and veins, promotes eye health, alleviates systemic inflammation, and reduces the risk of CVD and stroke.
- Contains natural, highly concentrated (99%) trans-resveratrol (200 mg per capsule) from Japanese knotweed - the more stable and bioavailable form.

Indications:

- Prevention of atherosclerosis and its complications (ie. CVD, stroke)
- Modulate immune system and help relieve allergies and hypersensitivities
- Skin Rejuvenation - protect against UV-induced damage, collagen breakdown, and hyperpigmentation from oxidation.
- Adjunct cancer therapy (*under strict supervision of experienced doctors in cancer management)

Description:

Resveratrol

Trans-Form vs. Cis-Form

Resveratrol exists in either the cis or trans form in nature, but it is the trans-isomer that is known to be more bioactive and more stable in terms of free radical scavenging, anti-proliferative, and cytotoxic activities.^{[1],[2],[3]} This could explain why some research has shown mixed results of resveratrol in human subjects.

A vast body of research has revealed resveratrol's multiple beneficial effects - including **anti-hypertensive, anti-atherosclerotic, and glycemic-modulating effects.**

Anti-Hypertensive Action

Resveratrol has been shown to activate several signalling pathways (i.e. AMPK, SIRT1, NRF2) that **promote endothelium nitric oxide synthase (eNOS) activity** and counteract reactive oxygen species (ROS) to achieve overall systemic vasorelaxation.^[4]

A recent meta-analysis of 6 clinical trials involving 247 subjects investigated the blood pressure (BP) lowering effect of resveratrol. It was reported that high doses of resveratrol (> 150 mg/day) significantly reduced systolic BP ($p=0.01$).^[5]

Anti-Atherosclerosis Effect

The formation of atherosclerotic plaques is usually caused by high levels of LDL accumulating at the arterial wall followed by oxidation, inflammation, and activation of immune cells and clotting factors.

Research has shown that resveratrol can not only reduce oxidation

Quantity: 42 Vegetarian Capsules

Ingredients (per capsule):

Trans-Resveratrol.....	200 mg (>99%; isolate from <i>Reynoutria japonica</i>) (root)
Grapeseed Extract (95% OPCs) (100:1).....	100 mg (<i>Vitis vinifera</i>) (seed) (equivalent to 10,000 mg dried herb)
Quercetin (isolate).....	100 mg
Olive Leaf Extract (<i>Olea europaea</i>) (7:1) (20% oleuropein).....	60 mg (equivalent to 420 mg dried herb)
Vitamin C.....	60 mg
Mixed tocopherol concentrate.....	30 mg

Non-medicinal Ingredients: Silicon dioxide, L-leucine, pullulan/hypromellose (capsule)

Suggested Use: Adults - Take 1 capsule, 1-2 times a day, with food, or as directed by a healthcare practitioner. Consult a health care practitioner for use beyond 3 months.

of LDL and inflammation in the vasculature, but also lower levels of total cholesterol, LDL, and triglycerides, and increase the level of HDL cholesterol. The main mechanisms of action include down-regulating HMG-CoA reductase^[6], promoting bile synthesis and secretion^[7], and increasing expression of LDL receptors in hepatocytes.^[8]

Glycemic Control

Resveratrol has demonstrated the ability to help with glycemic control. Its mechanisms of action include stimulation of insulin secretion and activation of Sirtuin 1 Protein (SIRT1), which is one of the principle factors in glucose homeostasis and insulin sensitivity.^[9]

In a randomized controlled trial involving patients with type 2 diabetes, the subjects were administered either 250 mg of resveratrol daily along with their oral hypoglycemic agents or just their hypoglycemic agents. After a period of 3 months, the resveratrol group showed significant improvement in their hemoglobin A1c ($p<0.05$).^[6]

Grape Seed Extract (OPCs)

Grape seed has been shown to exert beneficial actions against atherosclerotic plaque formation and cardiovascular risk by improving serum lipid profile,



reducing oxidation of LDL, increasing insulin sensitivity and serum reduced glutathione.^{[15],[16]} It's also a powerful antioxidant to help protect cells from inflammation and reactive oxygen species.

Multiple Anti-Tumor Potentials of Resveratrol, Grape Seed Extract, and Quercetin

A vast body of research has shown that reseveratrol, grapeseed extract, and quercetin pack synergistic mechanisms of action against cancers:

- Induces apoptosis of cancer cells^{[10],[11]} via mitochondria rescue^[17] and p53 activation^[18]
- Anti-angiogenic^{[12],[19]}
- Inhibits cancer growth and progression by inhibiting collagenases^{[13],[20]}
- Augments chemotherapy drugs^{[12],[14]}
- Inhibits COX-2^[22] and LOX-5^[23] to reduce metastasis
- Aromatase inhibitor to reduce indogenous estrogen levels^[21]
- Blocks epidermal growth factor receptor (EGFR), the mutation of which promotes proliferation of tumor cells.

Reference:

1. J.P. Basly, F. Marre-Fournier, J.C. Le Bail, G. Habrioux, A.J. Chulia, Estrogenic/ antiestrogenic and scavenging properties of (E)- and (Z)-resveratrol, *Life Sci.* 66 (2000) 769-777.
2. L. Camont, C.H. Cottart, Y. Rhayem, V. Nivet-Antoine, R. Djelidi, F. Collin, J.L. Beaudeux, D. Bonnefont-Rousselot, Simple spectrophotometric assessment of the trans-/cis-resveratrol ratio in aqueous solutions, *Anal. Chim. Acta* 634 (2009) 121-128.
3. Anisimova NYU, Kiselevsky MV, Sosnov AV, Sadovnikov SV, Stankov IN, Gakh AA. Trans-, Cis-, and dihydro-resveratrol: a comparative study. *Chemistry Central Journal* (2011). 5: 88.
4. Zordoky BNM, Robertson IM, Dyck JRB. Preclinical and clinical evidence for the role of resveratrol in the treatment of cardiovascular diseases. *Biochimica et Biophysica Acta* 1852 (2015): 1155-1177.
5. Y. Liu, W. Ma, P. Zhang, S. He, D. Huang, Effect of resveratrol on blood pressure: a meta-analysis of randomized controlled trials, *Clin. Nutr.* (2014), <http://dx.doi.org/10.1016/j.clnu.2014.03.009>.
6. I.J. Cho, J.Y. Ahn, S. Kim, M.S. Choi, T.Y. Ha, Resveratrol attenuates the expression of HMG-CoA reductase mRNA in hamsters, *Biochem. Biophys. Res. Commun.* 367 (2008) 190-194.
7. Q. Chen, E. Wang, L. Ma, P. Zhai, Dietary resveratrol increases the expression of hepatic 7alpha-hydroxylase and ameliorates hypercholesterolemia in high-fat fed C57BL/6J mice, *Lipids Health Dis.* 11 (2012) 56.
8. T. Yashiro, M. Nanmoku, M. Shimizu, J. Inoue, R. Sato, Resveratrol increases the expression and activity of the low density lipoprotein receptor in hepatocytes by the proteolytic activation of the sterol regulatory element-binding proteins, *Atherosclerosis* 220 (2012) 369-374.
9. Bhatt JK, Thomas S, Nanjan MJ. Resveratrol supplementation improves glycemic control in type 2 diabetes mellitus. *Nutrition Research* (2012). 32: 537-541.
10. Yu XD, Yang JL, Zhang WL, Liu DX. Resveratrol inhibits oral squamous cell carcinoma through induction of apoptosis and G2/M phase cell cycle arrest. *Tumour Biol.* 2015 Sep 26.
11. Trung LQ, Espinoza JL, An DT, Viet NH, Shimoda K, Nakao S. Resveratrol selectively induces apoptosis in malignant cells with the JAK2V617F mutation by inhibiting the JAK2 pathway.
12. Lee SH, Koo BS, Park SY, Kim YM. Anti-angiogenic effects of resveratrol in combination with 5-fluorouracil on B16 murine melanoma cells. *Mol Med Rep.* 2015 Aug;12(2):2777-83.
13. Han G, Xia J, Gao J, Inagaki Y, Tang W, Kokudo N. Anti-tumor effects and cellular mechanisms of resveratrol. *Drug Discov Ther.* 2015 Feb;9(1):1-12.
14. Dun J, Chen X, Gao H, Zhang Y, Zhang H, Zhang Y. Resveratrol synergistically augments anti-tumor effect of 5-FU in vitro and in vivo by increasing S-phase arrest and tumor apoptosis. *Exp Biol Med (Maywood).* 2015.
15. Razavi SM, Gholamin S, Eskandari A, Mohsenian N, Ghorbanikhaghjo A, Delazar A, Rashtchizadeh N, Keshtkar-Jahromi M, Argani H. Red grape seed extract improves lipid profiles and decreases oxidized low-density lipoprotein in patients with mild hyperlipidemia. *J Med Food.* 2013 Mar;16(3):255-8.
16. Kar P, Laight D, Rooprai HK, Shaw KM, Cummings M. Effects of grape seed extract in Type 2 diabetic subjects at high cardiovascular risk: a double blind randomized placebo controlled trial examining metabolic markers, vascular tone, inflammation, oxidative stress and insulin sensitivity. *Diabet Med.* 2009 May;26(5):526-31.
17. Derry M, Raina K, Agarwal R, Agarwal C. Differential effects of grape seed extract against human colorectal cancer cell lines: the intricate role of death receptors and mitochondria. *Cancer Lett.* 2013 Jun 28;334(1):69-78.
18. Lin YS, Chen SF, Liu CL, Nieh S. The chemoadjuvant potential of grape seed procyanidins on p53-related cell death in oral cancer cells. *J Oral Pathol Med.* 2012 Apr;41(4):322-31.
19. Huang S, Yang N, Liu Y, Gao J, Huang T, Hu L, Zhao J, Li Y, Li C, Zhang X. Grape seed proanthocyanidins inhibit colon cancer-induced angiogenesis through suppressing the expression of VEGF and Ang1. *Int J Mol Med.* 2012 Dec;30(6):1410-6.
20. Chung YC, Huang CC, Chen CH, Chiang HC, Chen KB, Chen YJ, Liu CL, Chuang LT, Liu M, Hsu CP. Grape-seed procyanoindins inhibit the in vitro growth and invasion of pancreatic carcinoma cells.
21. Khan SI, Zhao J, Khan IA, Walker LA, Dasmahapatra AK. Potential utility of natural products as regulators of breast cancer-associated aromatase promoters. *Reprod Biol Endocrinol.* 2011 Jun 21;9:91.
22. Bak MJ, Truong VL, Kang HS, Jun M, Jeong WS. Anti-inflammatory effect of procyanoindins from wild grape (*Vitis amurensis*) seeds in LPS-induced RAW 264.7 cells. *Oxid Med Cell Longev.* 2013;2013:409321.
23. Impact of wines and wine constituents on cyclooxygenase-1, cyclooxygenase-2, and 5-lipoxygenase catalytic activity.

Caution:

Consult a health care practitioner if symptoms persist or worsen.

Consult a health care practitioner prior to use if you are pregnant or breastfeeding; if you are taking other diuretics; if you have a kidney disorder; if you are taking prescription medication as resveratrol may alter the effectiveness of this medication.

For Education Purpose Only: The entire contents are not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of something you have read in this presentation. All statements in this article have not been evaluated by the Food and Drug Administration and are not intended to be used to diagnose, treat, or prevent any diseases.