

## Small Molecules

### Resveratrol

Antioxidant; COX-1 inhibitor

Catalog # 72862  
72864

100 mg  
500 mg



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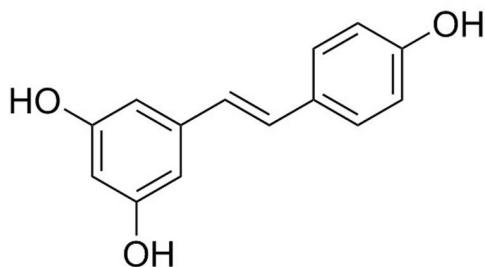
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## Product Description

Resveratrol is a potent phenolic antioxidant found in grapes and red wine that also has antiproliferative and anti-inflammatory activity (Rotondo et al.). Resveratrol is also a selective inhibitor of cyclooxygenase-1 (COX-1; Jang et al.). It inhibits COX and peroxidase activities of COX-1 with ED<sub>50</sub> values of 15 and 3.7 μM, respectively, with essentially no inhibition of the COX activity of COX-2.

Molecular Name:	Resveratrol
Alternative Names:	(E)-Resveratrol; trans-Resveratrol
CAS Number:	501-36-0
Chemical Formula:	C <sub>14</sub> H <sub>12</sub> O <sub>3</sub>
Molecular Weight:	228.2 g/mol
Purity:	≥ 98%
Chemical Name:	5-[(1E)-2-(4-hydroxyphenyl)ethenyl]-1,3-benzenediol
Structure:	



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 280 mM · Absolute ethanol ≤ 280 mM · PBS (pH 7.2) ≤ 430 μM For example, to prepare a 10 mM stock solution in DMSO, resuspend 100 mg in 43.8 mL of fresh DMSO.

NOTE: The solubility and stability of this molecule have been shown to be influenced by pH; this molecule has been reported to be unstable above pH 6.8 (Zupančič et al.).

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

## Published Applications

### MAINTENANCE AND SELF-RENEWAL

- Inhibits differentiation of pig preadipocytes into adipocytes (Bai et al.).
- Promotes self-renewal of human mesenchymal stem cells (Peltz et al.).

### DIFFERENTIATION

- Induces osteogenic differentiation in human bone marrow-derived mesenchymal stem cell cultures (Boissy et al.; Dai et al.; Peltz et al.).
- Induces osteoblast differentiation while blocking adipocyte development in mouse mesenchymal stem cells and cultured primary rat bone marrow cells (Bäckesjö et al.).

## References

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- Boissy P et al. (2005) Resveratrol inhibits myeloma cell growth, prevents osteoclast formation, and promotes osteoblast differentiation. *Cancer Res* 65(21): 9943–52.
- Dai Z et al. (2007) Resveratrol enhances proliferation and osteoblastic differentiation in human mesenchymal stem cells via ER-dependent ERK1/2 activation. *Phytomedicine* 14(12): 806–14.
- Jang M et al. (1997) Cancer chemopreventive activity of resveratrol, a natural product derived from grapes. *Science* 275(5297): 218–20.
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- Rotondo S et al. (1998) Effect of trans-resveratrol, a natural polyphenolic compound, on human polymorphonuclear leukocyte function. *Br J Pharmacol* 123(8): 1691–9.
- Zupančič S et al. (2015) Stability and solubility of trans-resveratrol are strongly influenced by pH and temperature. *Eur J Pharm BioPharm* 93: 196–204.

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