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$_{50}$ 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$_{14}$H$_{12}$O$_{3}$  
**Molecular Weight:** 228.2 g/mol  
**Purity:** ≥ 98%  
**Chemical Name:** 5-[(1E)-2-(4-hydroxyphenyl)ethenyl]-1,3-benzenediol

**Structure:**

![Resveratrol Structure](image)

**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.

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

Related Small Molecules
For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).