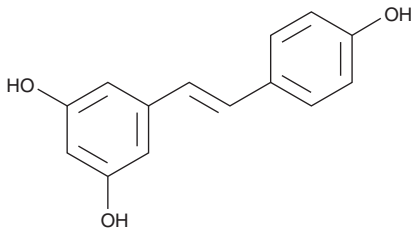
PRODUCT INFORMATION

trans-Resveratrol

Item No. 70675

CAS Registry No.: 501-36-0
Formal Name: 5-[(1E)-2-(4-hydroxyphenyl)ethenyl]-1,3-benzenediol
Synonym: (E)-Resveratrol
MF: $C_{14}H_{12}O_3$
FW: 228.2
Purity: ≥98%
UV/Vis.: λ_{max}: 218, 307, 321 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

trans-Resveratrol is supplied as a crystalline solid. A stock solution may be made by dissolving the trans-Resveratrol in the solvent of choice. *trans*-Resveratrol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of *trans*-Resveratrol in ethanol and DMSO is approximately 50 mg/ml and approximately 100 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of *trans*-Resveratrol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of *trans*-Resveratrol in PBS, pH 7.2, is approximately 0.1 mg/ml . We do not recommend storing the aqueous solution for more than one day.

Description

trans-Resveratrol is a polyphenolic phytoalexin found in a variety of plants, including grapes, that has anti-inflammatory, antioxidant, and anticancer activities.[1,2]It inhibits the cyclooxygenase and hydroperoxidase activities of COX-1 (EC_{50}s = 15 and 3.7 µM, respectively), but not COX-2 EC_{50}s = >100 µM and 85 µM, respectively).[1] *trans*-Resveratrol (3 and 8 mg/kg) inhibits carrageenan-induced paw edema in mice. It inhibits free radical formation in HL-60 human promyelocytic leukemia cells induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014; EC_{50} = 27 µM). *trans*-Resveratrol (1-25 µmol) reduces both the incidence and number of tumors in a two-stage mouse model of skin cancer induced by TPA and 7,12-dimethyl-benz[a]anthracene (DMBA). *trans*-Resveratrol (200 µM) also activates sirtuin 1 (SIRT1) by 8-fold *in vitro* and inhibits a variety of targets including ERK1, JNK1, Src, PKCα, aromatase/CYP19, and DNA polymerases α and δ (IC_{50}s = 37, 50, 20, <10, 25, 3.3, and 5 µM, respectively) *in vitro* and/or *ex vivo*.[2,3] It prolongs lifespan in model organisms including *C. elegans*, *D. melanogaster*, and mice.[2]

References

1. Jang, M., Cai, L., Udeani, G.O., *et al.* Cancer chemopreventive activity of resveratrol, a natural product derived from grapes. *Science* **275(5297)**, 218-220 (1997).
2. Pirola, L. and Fröjdö, S. Resveratrol: One molecule, many targets. *IUMBM Life* **60(5)**, 323-332 (2008).
3. Borra, M.T., Smith, B.C., and Denu, J.M. Mechanism of human SIRT1 activation by resveratrol. *J. Biol. Chem.* **280(17)**, 17187-17195 (2005).

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