

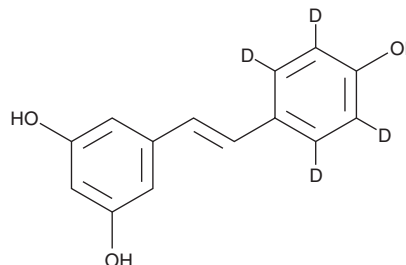
# PRODUCT INFORMATION



## *trans*-Resveratrol-d<sub>4</sub>

Item No. 13130

**CAS Registry No.:** 1089051-56-8  
**Formal Name:** 5-[(1E)-2-(4-hydroxyphenyl)ethenyl]-1,3-benzenediol-2,3,5,6-d<sub>4</sub>  
**Synonym:** (E)-Resveratrol-d<sub>4</sub>  
**MF:** C<sub>14</sub>H<sub>8</sub>D<sub>4</sub>O<sub>3</sub>  
**FW:** 232.3  
**Chemical Purity:** ≥98% (*trans*-resveratrol)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**UV/Vis.:** λ<sub>max</sub>: 307, 320 nm  
**Supplied as:** A solution in ethanol  
**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-d<sub>4</sub> is intended for use as an internal standard for the quantification of *trans*-resveratrol (Item No. 70675) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

*trans*-Resveratrol-d<sub>4</sub> is supplied as a solution in ethanol. To change the solvent, simply evaporate the *trans*-resveratrol-d<sub>4</sub> under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of *trans*-resveratrol-d<sub>4</sub> in ethanol and DMSO is approximately 50 mg/ml and approximately 100 mg/ml in DMF.

### Description

*trans*-Resveratrol is a polyphenolic phytoalexin found in a variety of plants, including grapes, that has anti-inflammatory, antioxidant, and anticancer activities.<sup>1,2</sup> It inhibits the cyclooxygenase and hydroperoxidase activities of COX-1 (EC<sub>50</sub>s = 15 and 3.7 μM, respectively), but not COX-2 (EC<sub>50</sub>s = >100 μM and 85 μM, respectively).<sup>1</sup> *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<sub>50</sub> = 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<sub>50</sub>s = 37, 50, 20, <10, 25, 3.3, and 5 μM, respectively) *in vitro* and/or *ex vivo*.<sup>2,3</sup> It prolongs lifespan in model organisms including *C. elegans*, *D. melanogaster*, and mice.<sup>2</sup>

### References

1. Jang, M., Cai, L., Udeani, G.O., *et al.* *Science* **275**(5297), 218-220 (1997).
2. Pirola, L. and Fröjdö, S. *IUBMB Life* **60**(5), 323-332 (2008).
3. Borra, M.T., Smith, B.C., and Denu, J.M. *J. Biol. Chem.* **280**(17), 17187-17195 (2005).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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