# Resveratrol-$d_4$

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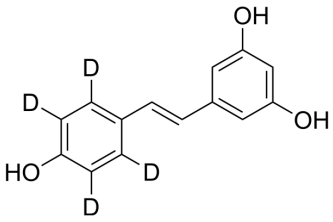
| **Cat. No.:** | HY-16561S |
| **CAS No.:** | 1089051-56-8 |
| **Molecular Formula:** | $C_{14}H_8D_4O_3$ |
| **Molecular Weight:** | 232.27 |
| **Target:** | IKK; Autophagy; Mitophagy; Sirtuin; Apoptosis; Bacterial; Fungal; Antibiotic; Keap1-Nrf2; Isotope-Labeled Compounds |
| **Pathway:** | NF-κB; Autophagy; Cell Cycle/DNA Damage; Epigenetics; Apoptosis; Anti-infection; Others |
| **Storage:** | Solution, -20°C, 2 years |




## BIOLOGICAL ACTIVITY

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| **Description** | Resveratrol-$d_4$ is the deuterium labeled Resveratrol. Resveratrol (trans-Resveratrol; SRT501), a natural polyphenolic phytoalexin that possesses anti-oxidant, anti-inflammatory, cardioprotective, and anti-cancer properties. Resveratrol (SRT 501) has a wide spectrum of targets including mTOR, JAK, β-amyloid, Adenylyl cyclase, IKKβ, DNA polymerase. Resveratrol also is a specific SIRT1 activator[1][2][3][4]. Resveratrol is a potent pregnane X receptor (PXR) inhibitor[5]. Resveratrol is an Nrf2 activator, ameliorates aging-related progressive renal injury in mice model[6]. Resveratrol increases production of NO in endothelial cells[7]. |
| **In Vitro** | Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. Pirola L, et al. Resveratrol: one molecule, many targets. IUBMB Life. 2008 May;60(5):323-32.

[3]. Lu R, et al. Resveratrol, a natural product derived from grape, exhibits antiestrogenic activity and inhibits the growth of human breast cancer cells. J Cell Physiol. 1999 Jun;179(3):297-304.

[4]. Lee MH, et al. Resveratrol suppresses growth of human ovarian cancer cells in culture and in a murine xenograft model: eukaryotic elongation factor 1A2 as a potential target. Cancer Res. 2009 Sep 15;69(18):7449-58.

[5]. Du LL, et al. Activation of sirtuin 1 attenuates cerebral ventricular streptozotocin-induced tau hyperphosphorylation and cognitive injuries in rat hippocampi. Age (Dordr). 2014 Apr;36(2):613-23.

[6]. Smutny T, et al. Resveratrol as an inhibitor of pregnane X receptor (PXR): another lesson in PXR antagonism. J Pharmacol Sci. 2014;126(2):177-8.

[7]. Eun Nim Kim,et al. Resveratrol, an Nrf2 activator, ameliorates aging-related progressive renal injury. Aging (Albany NY). 2018 Jan; 10(1): 83–99.

[8]. Huige Li, et al. Resveratrol and Vascular Function. Int J Mol Sci. 2019 Apr 30;20(9):2155.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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