Oxyresveratrol

Cat. No.: HY-N1430

CAS No.: 29700-22-9

Molecular Formula: $C_{14}H_{12}O_4$

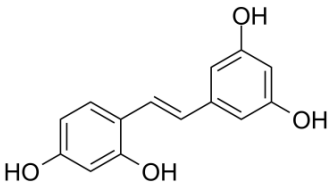
Molecular Weight: 244.24

Target: Tyrosinase; HSV; Autophagy

Pathway: Metabolic Enzyme/Protease; Anti-infection; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (204.72 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.0943 mL	20.4717 mL	40.9433 mL
	5 mM	0.8189 mL	4.0943 mL	8.1887 mL
	10 mM	0.4094 mL	2.0472 mL	4.0943 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Oxyresveratrol (trans-Oxyresveratrol) is a potent naturally occurring antioxidant and free radical scavenger (IC_{50} of 28.9 μM against DPPH free radicals). Oxyresveratrol is potent and noncompetitive tyrosinase inhibitor with an IC_{50} value of 1.2 μM for mushroom tyrosinase. Oxyresveratrol is effective against HSV-1, HSV-2 and varicella-zoster virus, and has neuroprotective effects[1][2][3][4].

IC_{50} & Target

IC50: 1.2 μM (Mushroom tyrosinase)[2]; 28.9 μM (DPPH free radicals)[1]; 45.31 μM (NO)[1]
HSV-1, HSV-2, Varicella-zoster virus[4]

In Vitro	Cultures of the murine microglial cell line N9 and primary mixed glial cultures were used to test the drug effects of NO production upon expression of the inducible isoform of nitric oxide synthase (iNOS). Oxyresveratrol considerably diminished NO (nitrite) levels (IC_{50} of 45.31 μM) in murine microglial cells[1]. Oxyresveratrol can inhibit DOPA oxidase activity, cyclooxygenase, and rat liver mitochondrial ATPase activity[1]. Oxyresveratrol exhibits 63.3% inhibition at 100 μM and an IC_{50} value of 52.7 μM on the murine tyrosinase activity. Oxyresveratrol exhibits a dose-dependent inhibitory effect on L-tyrosine oxidation by the murine tyrosinase but does not inhibit the promoter activity of the enzyme gene. Oxyresveratrol exhibits significant inhibitory effects at 10 μM and higher concentrations on murine tyrosinase activity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Oxyresveratrol (2-30 mg/kg; intraperitoneal injection; twice) treatment reduces the brain infarct volume in MCAO rats. Oxyresveratrol treatment diminishes cytochrome c release and decreased caspase-3 activation, and reduces the number of apoptotic nuclei in ischemic brain in MCAO rats[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult male Wistar rats (300-350 g) with middle cerebral artery occlusion (MCAO)[3]
Dosage:	2 mg/kg, 10 mg/kg, 20 mg/kg and 30 mg/kg
Administration:	Intraperitoneal injection; twice (at the time of occlusion and at the time of reperfusion)
Result:	Reduced the brain infarct volume in MCAO rats.

REFERENCES

[1]. Lorenz. et al. Oxyresveratrol and resveratrol are potent antioxidants and free radical scavengers: Effect on nitrosative and oxidative stress derived from microglial cells. Nitric Oxide 9(2) 64-76 (2003).

[2]. Kim, Y.M., Yun, J., Lee, C., et al. Oxyresveratrol and hydroxystilbene compounds. Inhbitory effect on tyrosinase and mechanism of action. J Biol Chem277(18) 16340-16344 (2002).

[3]. Shaida A Andrabi et al. Oxyresveratrol (trans-2,3′,4,5′-tetrahydroxystilbene) is neuroprotective and inhibits the apoptotic cell death in transient cerebral ischemia. Brain Res, 2004 Aug 13, 1017(1-2):98-107.

[4]. Vimolmas Lipipun, et al. Topical cream-based oxyresveratrol in the treatment of cutaneous HSV-1 infection in mice. Antiviral Res. 2011 Aug;91(2):154-60.

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