Sirtinol

Cat. No.: HY-13515

CAS No.: 410536-97-9

Molecular Formula: $C_{26}H_{22}N_2O_2$

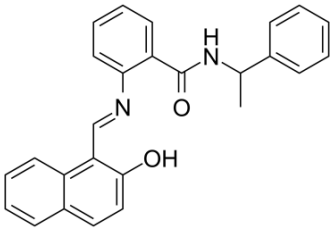
Molecular Weight: 394.47

Target: Sirtuin; Autophagy; Apoptosis

Pathway: Cell Cycle/DNA Damage; Epigenetics; Autophagy; Apoptosis

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 : 10 mg/mL (25.35 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5350 mL	12.6752 mL	25.3505 mL
	5 mM	0.5070 mL	2.5350 mL	5.0701 mL
	10 mM	0.2535 mL	1.2675 mL	2.5350 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: ≥ 1 mg/mL (2.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sirtinol is a **sirtuin (SIRT)** inhibitor, with **IC_{50}**s of 48 μM, 57.7 μM and 131 μM for ySir2, hSIRT2 and hSIRT2, respectively[1][2][3][4].

IC_{50} & Target

ySir2	hSIRT2	hSIRT1
48 μM (IC_{50})	57.7 μM (IC_{50})	131 μM (IC_{50})

In Vitro

Sirtinol reduces the growth of MCF-7 cells in a concentration- and time-dependent manner. The IC_{50} values of sirtinol are 48.6 μM and 43.5 μM after 24 and 48 h of treatment, respectively. Sirtinol significantly decreases SIRT1 expression and increases the acetylated p53 level[1]. Sirtinol attenuates the proliferation and induces apoptosis of nonsmall cell lung cancer (NSCLC) H1299 cells and causes the significantly increased level of FoxO3a, a proapoptotic transcription factor targeted by Sirt1[2].

In Vivo	Sirtinol has anti-inflammatory effects through direct inhibition of HNE activity and attenuates HNE-induced and LPS-mediated tissue or organ injury[3].

PROTOCOL

Cell Assay [2]	Sirtinol is dissolved in 100% DMSO at concentration of 10 mM and stored at −20°C until use. The cell proliferation of H1299 cells is determined by trypan blue dye exclusion assay. Human nonsmall cell lung cancer (NSCLC) cells are seeded in 12-well plates and treated with indicated concentrations of sirtinol (0, 10, 20, and 50 μM) for 24 h and 48 h, respectively. After incubation, the cells are stained by 0.2% trypan blue and counted by Countess[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Mice: 30 male mice (20–25 g, 7–8 weeks old) are used in this model. Briefly, mice are randomly divided into five groups; then mice are intraperitoneally injected with 50 μL DMSO (vehicle group) or sirtinol (2.5 or 5.0 mg/kg body weight). After 1 h, paw inflammation is induced . The thickness of the paw is measured before and after HNE or saline injection[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- **Cell Death Dis**. 2018 May 1;9(5):559.
- **J Cell Mol Med**. 2020 Aug 13.
- **Cell Cycle**. 2020 Aug 13;1-10.
- **Mol Cell Biochem**. 2018 Feb;439(1-2):213-223.
- **Graefes Arch Clin Exp Ophthalmol**. 2020 Feb;258(2):335-344.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Wang J, et al. Sirtinol, a class III HDAC inhibitor, induces apoptotic and autophagic cell death in MCF-7 human breast cancer cells. Int J Oncol. 2012 Sep;41(3):1101-1109.

[2]. Fong Y, et al. The antiproliferative and apoptotic effects of sirtinol, a sirtuin inhibitor on human lung cancer cells by modulating Akt/β-catenin-Foxo3a axis. ScientificWorldJournal. 2014;2014:937051.

[3]. Tsai YF, et al. Sirtinol inhibits neutrophil elastase activity and attenuates lipopolysaccharide-mediated acute lung injury in mice. Sci Rep. 2015 Feb 10;5:8347.

[4]. Mai A, et al. Design, synthesis, and biological evaluation of sirtinol analogues as class III histone/protein deacetylase (Sirtuin) inhibitors. J Med Chem. 2005 Dec 1;48(24):7789-95.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA