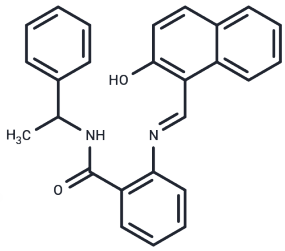
Data Sheet (Cat.No.T6671)

TargetMol

Sirtinol

Chemical Properties



CAS No. : 410536-97-9

Formula: C26H22N2O2

Molecular Weight: 394.47

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Sirtinol is a selective SIRT1/2 inhibitor (IC50: 131/38 μM).
Targets(IC50)	Apoptosis,Autophagy,Sirtuin
In vitro	In male SD rats, Sirtinol (1 mg/kg) can mitigate the release of pro-inflammatory cytokines and protect against post-traumatic hemorrhage.
In vivo	In both MCF-7 and H1299 cells, treatment with Sirtinol (100 μM) for 24 hours led to sustained growth inhibition lasting until the 9th day after Sirtinol withdrawal. Sirtinol induced an increase in SA-β-gal activity and PAI-1 expression in MCF-7 and H1299 cells, outperforming Splitomicin. In these cell types, Sirtinol (>33 μM) more effectively inhibited colony formation compared to Splitomicin. Sirtinol (100 μM) significantly reduced the phosphorylation levels of ERK, JNK/SAPK, and p38 MAPK in MCF-7 and H1299 cells, both under basal conditions and following EGF or IGF-I induction. It also blocked the basal and EGF-induced Ras activity. Consistent with this, Sirtinol treatment reduced the phosphorylation of MEK, Raf-1, MKK7, and SEK1/MKK4 induced by the basal level and by IGF-I or EGF. It effectively inhibited the enzymatic activity of recombinant yeast Sir2p in vitro (IC50: 68 μM), without inhibiting human HDAC1, suggesting that Sirtinol may be a specific inhibitor for the sirtuin family. Unlike TSA, Sirtinol did not alter the overall acetylation levels of histones and tubulin in human primary fibroblasts or change the morphology of HeLa tumor cell lines. Sirtinol inhibited Sirt1 activity, thereby increasing UV and H2O2-induced p53 acetylation, which accelerated apoptosis in skin keratinocytes. The blockade of Sirt1 enzymatic activity by Sirtinol significantly inhibited the growth and viability of human-derived PCa cells without affecting normal prostatic epithelial cells.
Kinase Assay	Inhibition in vitro of human Sirt2 activity: 1.5 μg of recombinant human GST-Sirt2 (amino acids 18-340) are incubated at 30°C for 2 hours in 50 μL of assay buffer (50 mM Tris-HCl, pH 8.8, 4 mM MgCl2, 0.2 mM dithiothreitol with different concentrations of Sirtinol, 50 μM NAD, and tritiated acetylated HeLa histones (1000 cpm), purified by acid extraction. HDAC activity is determined by scintillation counting of the ethyl acetate-soluble [3H] acetic acid.
Cell Research	Cells are grown to 60% confluence and then treated with 30 μM or 120 μM sirtinol for 24 or 48 hours. Cells are trypsinized and collected. The cells are pelleted by centrifugation and resuspended in PBS (120 μL). Trypan blue (0.4% in PBS; 10 μL) is added to a smaller

Cell Research	aliquot (10 μL) of cell suspension, and the number of cells (viable unstained and nonviable blue) are counted. (Only for Reference)

Solubility Information

Solubility	DMSO: 27.8 mg/mL (70.47 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.78 mg/mL (7.05 mM),Solution. 10% DMSO+90% Saline: < 2.78 mg/mL (7.05 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.535 mL	12.6752 mL	25.3505 mL
5 mM	0.507 mL	2.535 mL	5.0701 mL
10 mM	0.2535 mL	1.2675 mL	2.535 mL
50 mM	0.0507 mL	0.2535 mL	0.507 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Grozinger CM, et al. J Biol Chem, 2001, 276(42), 38837-38843.
Weiβ M, Chanou A, Schauer T, et al.Single-copy locus proteomics of early-and late-firing DNA replication origins identifies a role of Ask1/DASH complex in replication timing control.Cell Reports.2023, 42(2): 112045.
Mai A, et al. J Med Chem, 2005, 48(24), 7789-7795.
Ota H, et al. Oncogene, 2006, 25(2), 176-185.
Liu FC, et al. Acta Anaesthesiol Scand, 2008, 52(5), 635-640.
Kojima K, et al. Biochem Biophys Res Commun, 2008, 373(3), 423-428.
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.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481