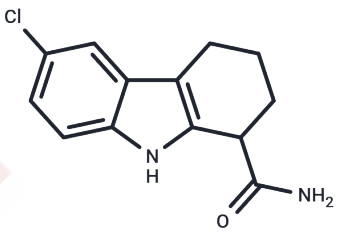
Data Sheet (Cat.No.T6111)

TargetMol

Selisistat

Chemical Properties



CAS No. : 49843-98-3

Formula: C13H13ClN2O

Molecular Weight: 248.71

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	Selisistat (EX-527) is a potent and specific inhibitor of the deacetylase SIRT1 (IC50 = 38 nM) and can be utilized in the study of neurological disorders such as Huntington's chorea.
Targets(IC50)	Sirtuin
In vitro	**METHODS**: Human colorectal cancer cells, HCT116, were cultured in 0.1% serum and Selisistat (1-2 μM) for 7 days and cell numbers were assayed. **RESULTS**: When HCT116 cells were cultured in 0.1% serum, the addition of Selisistat resulted in a 90% increase in cell number after 7 days. SirT1 is an important regulator of cell proliferation in growth factor-deficient conditions. [1] **METHODS**: Human lung cancer cells NCI-H460 were treated with etoposide (20 μM) and Selisistat (1 μM) for 6 h, and the expression levels of target proteins were measured by Western Blot. **RESULTS**: Selisistat produced an increase in acetylated p53 in cells treated with the DNA damaging agent etoposide. [2]
In vivo	**METHODS**: To investigate the effects on lung injury, Selisistat (10 mg/kg) was administered intraperitoneally to Balb/C mice, and liver injury was induced by injection of LPS 0.5 h later. **RESULTS**: Selective inhibition of SIRT1 by Selisistat may attenuate endotoxemia-associated acute lung injury partly by inhibiting mTOR. [3] **METHODS**: To investigate the effects on Huntington's chorea (HD), Selisistat (5-20 mg/kg, 0.5% HPMC) was administered by gavage to R6/2 mice once daily until death. **RESULTS**: Selisistat treatment resulted in a significant increase in survival and a significant increase in median lifespan of 3 weeks in mice receiving the 20 mg/kg dose, and a significant improvement was also observed when examining voluntary motor activity. [4]
Cell Research	NCI-H460 cells, MCF-7 cells, U-2 OS cells, or HMEC were plated at 2,000 cells per well in opaque-walled 96-well plates for the viability assay and 800 cells per well in 96-well Cytostar-T scintillating microplates for the proliferation assay. Cells were incubated for 1 day (NCI-H460) or 2 days (MCF-7, U-2 OS, and HMEC) prior to exposure to DNA-damaging agents and deacetylase inhibitors. All experiments were performed in triplicate. For viability assays, cells were treated with the indicated compounds for 48 h. Cell viability was then determined using the Cell Titer-Glo luminescent assay, which measures total ATP levels as an index of cell number. Luminescence was measured on a

Cell Research	Luminoskan Ascent. For the proliferation assay, 0.5 μCi/ml of [14C]thymidine was added to the medium immediately after the genotoxins and deacetylase inhibitors. Plates were counted at 48 h (HMEC) or 72 h (NCI-H460, MCF-7, and U-2 OS cells) in a Microbeta liquid scintillation counter. Thymidine incorporated by the cells was detected by proximity to the scintillant in the base of the Cytostar-T tissue culture plate [1].
Animal Research	Mice were injected with RSV (RSV) 30mg/kg (4ml/kg) or equivalent volume of DMSO (Vehicle) (4ml/kg) intraperitoneally 18 hours pre-sepsis. This dose of RSV in mice was as per documented literature. In one group of mice, RSV pre-treated mice received EX-527 (10 mg/kg intraperitoneally; 4ml/kg, Vehicle: DMSO) within 10 minutes of cecal ligation and puncture [5].

Solubility Information

Solubility	DMSO: 257.5 mg/mL (1035.34 mM),Sonication is recommended. Ethanol: 12.4 mg/mL (49.86 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: 1.87 mg/mL (7.52 mM),Solution. *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	4.0207 mL	20.1037 mL	40.2075 mL
5 mM	0.8041 mL	4.0207 mL	8.0415 mL
10 mM	0.4021 mL	2.0104 mL	4.0207 mL
50 mM	0.0804 mL	0.4021 mL	0.8041 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

Kabra N, et al. SirT1 is an inhibitor of proliferation and tumor formation in colon cancer. J Biol Chem. 2009 Jul 3;284 (27):18210-7.
Yuan J, Wei Z, Xin G, et al. Vitamin B12 Attenuates Acute Pancreatitis by Suppressing Oxidative Stress and Improving Mitochondria Dysfunction via CBS/SIRT1 Pathway. Oxidative Medicine and Cellular Longevity. 2021, 2021.
Lu S, Zhou J, Yang C, et al. γ-glutamylcysteine ameliorates D-gal-induced senescence in PC12 cells and mice via activating AMPK and SIRT1. Food & Function. 2022
Solomon JM, et al. Inhibition of SIRT1 catalytic activity increases p53 acetylation but does not alter cell survival following DNA damage. Mol Cell Biol. 2006 Jan;26(1):28-38.
Huang J, et al. The SIRT1 inhibitor EX-527 suppresses mTOR activation and alleviates acute lung injury in mice with endotoxiemia. Innate Immun. 2017 Nov;23(8):678-686.
Luo Y, Lu S, Gao Y, et al. Araloside C attenuates atherosclerosis by modulating macrophage polarization via Sirt1-mediated autophagy. Aging (Albany NY). 2020, 12(2): 1704.
Luo Y, Lu S, Gao Y, et al. Araloside C attenuates atherosclerosis by modulating macrophage polarization via Sirt1-mediated autophagy. Aging (Albany NY). 2020, 12(2): 1704.
mith MR, et al. A potent and selective Sirtuin 1 inhibitor alleviates pathology in multiple animal and cell models of Huntington's disease. Hum Mol Genet. 2014 Jun 1;23(11):2995-3007.
Wang X, et al. Resveratrol attenuates microvascular inflammation in sepsis via SIRT-1-Induced modulation of adhesion molecules in ob/ob mice. Obesity (Silver Spring). 2015 Jun;23(6):1209-17.
Chen W, Lin B, Xie S, et al. Naringenin protects RPE cells from NaIO3-induced oxidative damage in vivo and in vitro through up-regulation of SIRT1. Phytomedicine. 2020: 153375
Zhou J, Yan X, Bi X, et al.γ-Glutamylcysteine rescues mice from TNBS-driven inflammatory bowel disease through regulating macrophages polarization.Inflammation Research.2023: 1-19.
Luo Y, Lu S, Gao Y, et al. Araloside C attenuates atherosclerosis by modulating macrophage polarization via Sirt1-mediated autophagy[J]. Aging (Albany NY). 2020, 12(2): 1704.
Chen W, Lin B, Xie S, et al. Naringenin protects RPE cells from NaIO3-induced oxidative damage in vivo and in vitro through up-regulation of SIRT1[J]. Phytomedicine. 2020: 153375.
Cao P, Wang Y, Zhang C, et al.Quercetin ameliorates non-alcoholic fatty liver disease (NAFLD) via the promotion of AMPK-mediated hepatic mitophagy.The Journal of Nutritional Biochemistry.2023: 109414.
Peng X, Yuan H, Chen G, et al.Investigation on the effect of ulinastatin on the apoptosis of vascular smooth muscle cells in rats with aortic dissection based on the Sirt1/FoxO3a pathway.Cellular and Molecular Biology.2023, 69(13): 96-101.
Wang L, Hou J, Xu H, et al.Angong Niuhuang Pill pretreatment alleviates cerebral ischemia-reperfusion injury by inhibiting excessive autophagy through the SIRT1-H4K16ac axis.Journal of Ethnopharmacology.2024: 119214.