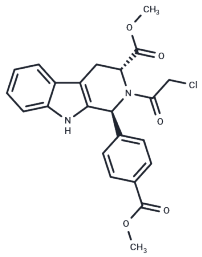
Data Sheet (Cat.No.T3646)

TargetMol

RSL3

Chemical Properties



CAS No. : 1219810-16-8

Formula: C23H21ClN2O5

Molecular Weight: 440.88

Storage: Store at low temperature
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	RSL3 (RSL3 1S) is an inhibitor of GPX4, and inhibits system xc- that blocks GSH synthesis (IC50=100 nM). RSL3 is a VDAC-independent activator of ferroptosis that is selective for tumor cells carrying oncogenic RAS.
Targets(IC50)	Ferroptosis,Reactive Oxygen Species,Glutathione Peroxidase,GPX,ROS,p62
In vitro	**METHODS**: Human hepatocellular carcinoma cells HepG2, HA22T/VGH were treated with RSL3 (0.1-10 μM) for 72 h, and cell growth inhibition was detected by MTT. **RESULTS**: RSL3 dose-dependently inhibited the growth of HepG2 and HA22T/VGH cells, with an IC50 of about 0.07 μM for HepG2 cells and 0.3 μM for HA22T/VGH cells. [1] **METHODS**: Human glioblastoma cells U87 and U251 were treated with RSL3 (0.25 μM and 0.5 μM) for 24 h, and the expression levels of target proteins were detected by Western Blot. **RESULTS**: RSL3 treatment induced a decrease in the expression of ferroptosis-related proteins GPX4, ATF4 and xCT, and an up-regulation in the expression of HO-1 in U87 and U251 cells. [2] **METHODS**: Human colorectal cancer cells HCT116 and LoVo were treated with RSL3 (3 μM) for 24 h. Labile iron pool (LIP) and ROS intracellular levels were analyzed by Flow Cytometry. **RESULTS**: RSL3 promoted the increase of LIP and accumulation of ROS associated with ferroptosis. [3]
In vivo	**METHODS**: To test the antitumor activity in vivo, RSL3 (100 mg/kg in 20 μL DMSO plus 80 μL corn oil) was intraperitoneally injected into NSG mice bearing human prostate cancer tumors DU145 or PC3 twice a week for sixteen days. **RESULTS**: RSL3 treatment significantly inhibited the growth of human prostate cancer tumors, indicating antitumor activity in vivo. [4] **METHODS**: To detect anti-tumor activity in vivo, RSL3 (1 mg/kg) and cetuximab (13 mg/kg) were intraperitoneally injected once a week for sixteen days into BALB/c nude mice harboring KRAS-mutant human colorectal cancer tumor DLD-1. **RESULTS**: RSL3 treatment significantly inhibited the growth of KRAS-mutant tumors. Cetuximab enhanced RSL3-induced ferroptosisby activating p38 MAPK and inhibiting the Nrf2/HO-1 axis, which further inhibited tumor growth. [5]
Cell Research	TERT/LT/ST/RASV12 cells are seeded in 10 cm dishes and treated with 1 μM staurosporine, 10 μg/ml erastin, 20 μg/ml RSL5, and 1 μg/ml RSL3 for 16 hr. Both dying

Cell Research	cells and live cells in each 10 cm dish are harvested and collected in the same 15 ml tubes by centrifuging cell suspension at 1000 rpm for 5 min. (Only for Reference)

Solubility Information

Solubility	DMSO: 240 mg/mL (544.37 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: 4.41 mg/mL (10 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	2.2682 mL	11.341 mL	22.6819 mL
5 mM	0.4536 mL	2.2682 mL	4.5364 mL
10 mM	0.2268 mL	1.1341 mL	2.2682 mL
50 mM	0.0454 mL	0.2268 mL	0.4536 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

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