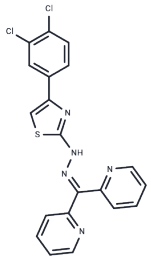
Data Sheet (Cat.No.T211919)

TargetMol

Nrf2-IN-4

Chemical Properties



CAS No. : 2417486-06-5

Formula: C20H13Cl2N5S

Molecular Weight: 426.32

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	Nrf2-IN-4 is an Nrf2 inhibitor that induces ferroptosis by disrupting cellular iron homeostasis, promoting ferritin degradation, and ultimately triggering ferroptosis. It activates lysosomes through iron-dependent reactive oxygen species (ROS) production and lysosomal acidification. Nrf2-IN-4 demonstrates significant antitumor effects and is applicable in breast cancer research.
Targets(IC50)	Ferroptosis,Nrf2,ROS,ATG
In vitro	Nrf2-IN-4 (Compound PhcY) demonstrates inhibitory effects on various cancer cell lines at concentrations ranging from 0.01-10 μM over 72 hours. The IC50 values are as follows: MCF-7 cells at 80 nM, HepG2 cells at 3.26 μM, T24 cells at 0.90 μM, HCT116 cells at 2.89 μM, L929 fibroblast cells at 3.27 μM, and HEK293 human embryonic kidney cells at 5.36 μM. In MCF-7 cells, Nrf2-IN-4 (40-160 nM) induces "ballooning" and rounded cell morphology with cytoplasmic vacuolization. It inhibits colony formation in MCF-7 cells in a dose-dependent manner at 40-80 nM over 14 days. At concentrations of 80-160 nM for 24-48 hours, it increases labile iron pool (LIP) and ferroptosis in MCF-7 cells by inhibiting Nrf2. Nrf2-IN-4 (80-320 nM, 24 h) induces lysosomal activation in MCF-7 cells by promoting iron-dependent reactive oxygen species (ROS) production and lysosomal acidification. Additionally, Nrf2-IN-4 (40-320 nM, 0-12 h) induces ferritin degradation in MCF-7 cells through ferritinophagy. It also induces oxidative stress leading to a significant decrease in mitochondrial membrane potential in MCF-7 cells, an effect mitigated by Acetylcysteine (N-acetylcysteine) (NAC). Nrf2-IN-4 (0.1-0.2 μM) is notably more effective than ML385 in inhibiting tumor organoid growth.
In vivo	Nrf2-IN-4 (Compound PhcY) (10 mg/kg, administered intraperitoneally once daily for 21 consecutive days) demonstrates significant antitumor activity in the MCF-7 xenograft mouse model.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3457 mL	11.7283 mL	23.4566 mL
5 mM	0.4691 mL	2.3457 mL	4.6913 mL
10 mM	0.2346 mL	1.1728 mL	2.3457 mL
50 mM	0.0469 mL	0.2346 mL	0.4691 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.