Data Sheet (Cat.No.T213777)

TargetMol

Ferroptosis-IN-21

Chemical Properties

CAS No. : 6640-50-2

Formula: C9H11NO

Molecular Weight: 149.19

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	Ferroptosis-IN-21 is an inhibitor of ferroptosis that combats renal ischemia-reperfusion injury by directly scavenging peroxy free radicals to prevent cell death. It demonstrates broad-spectrum, nanomolar-level inhibitory potency against various ferroptosis inducers in renal tubular epithelial cells and effectively suppresses the accumulation of lipid reactive oxygen species (ROS). Additionally, Ferroptosis-IN-21 significantly alleviates renal ischemia-reperfusion injury in mice, as evidenced by improved histological damage and functional impairment, reduced expression of inflammatory cytokines, and decreased levels of lipid peroxidation biomarkers such as 4-hydroxynonenal. Ferroptosis-IN-21 is a potential candidate in research for developing ferroptosis-targeted therapeutics.
Targets(IC50)	Ferroptosis,ROS
In vitro	Ferroptosis-IN-21 (compound 6) at concentrations of 0.01-10 μM over 24 hours exhibits nanomolar-level cytoprotective activity in HT-1080 cells (EC50 = 61.7 nM) and can completely reverse cell death at a concentration of 200 nM. It also dose-dependently protects human renal cortical epithelial cells (HKC) and human renal proximal tubule epithelial cells (HK-2) from ferroptosis induced by RSL-3 and FIN-56, demonstrating its broad-spectrum anti-ferroptosis efficacy. Additionally, Ferroptosis-IN-21 at 50-500 nM for 24 hours significantly inhibits RSL-3-induced lipid ROS accumulation and MDA elevation without affecting GPX4 protein levels. At 10 μM, it lacks iron chelation capabilities, ruling out mechanisms involving iron chelation. Furthermore, at concentrations of 1-80 μM over 30 minutes, Ferroptosis-IN-21 displays potent direct radical scavenging activity in cell-free DPPH assays.
In vivo	Ferroptosis-IN-21 (administered at 5 and 10 mg/kg via intraperitoneal injection 24 and 1 hour before modeling) demonstrates significant renal protective effects against ischemic acute kidney injury in a mouse model of renal ischemia-reperfusion.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.7029 mL	33.5143 mL	67.0286 mL
5 mM	1.3406 mL	6.7029 mL	13.4057 mL
10 mM	0.6703 mL	3.3514 mL	6.7029 mL
50 mM	0.1341 mL	0.6703 mL	1.3406 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.