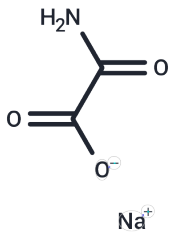
Data Sheet (Cat.No.T19831)

TargetMol

Sodium Oxamate

Chemical Properties



CAS No. : 565-73-1

Formula: C2H2NNaO3

Molecular Weight: 111.03

Storage: Store under nitrogen
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	Sodium Oxamate (Oxamic acid sodium salt) is an LDH inhibitor that specifically inhibits LDHA. Sodium Oxamate has antitumor activity and induces cell cycle arrest and apoptosis.
Targets(IC50)	Apoptosis,CDK,Dehydrogenase
In vitro	**METHODS**: Human lung cancer cells H1299, A549 and normal human bronchial epithelial cells HBE were treated with Sodium Oxamate (1-100 mmol/L) for 24 h. Cell viability was measured by CCK-8 assay. **RESULTS**: Sodium Oxamate significantly inhibited the cell viability of H1299 and A549 cells in a dose-dependent manner, with IC50 of 32.13±2.50 and 19.67±1.53 mmol/L, respectively. Sodium Oxamate had almost no effect on HBE cells, with an IC50 of 96.73 ±7.60 mmol/L. [1]. **METHODS**: Human lung cancer cells A549 and normal human bronchial epithelial cells HBE were treated with Sodium Oxamate (20-100 mmol/L) for 24 h, and several intracellular biochemical parameters were measured. **RESULTS**: LDH activity, ATP content and NADPH/NADP ratio were significantly decreased and ROS content was significantly increased in A549 cells after Sodium Oxamate treatment. In contrast, glucose metabolism was less affected, although LDH enzyme was also inhibited in a dose-dependent manner in HBE cells. [2]
In vivo	**METHODS**: To detect the antitumor activity in vivo, Sodium Oxamate (300 mg/kg once a day) and pembrolizumab (10 mg/kg twice a week) were intraperitoneally injected into B-NDG mice carrying human lung cancer tumor H1299 for fifteen days. **RESULTS**: Both Sodium Oxamate and pembrolizumab significantly delayed tumor growth in monotherapy, and the combination therapy was more effective. [1] **METHODS**: To explore the potential for the treatment of diabetes, Sodium Oxamate (350-750 mg/kg) was administered intraperitoneally to db/db mice once daily for twelve weeks. **RESULTS**: Sodium Oxamate treatment reduced body weight gain, blood glucose and HbA1c levels, and improved insulin secretion, pancreatic islet morphology, and insulin sensitivity in db/db mice.Sodium Oxamate improves glycemic control and insulin sensitivity in db/db mice, primarily by inhibiting the production of tissue lactic acid. [3]

Solubility Information

Solubility	H2O: 25.5 mg/mL (229.67 mM),Sonication is recommended. DMSO: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	9.0066 mL	45.0329 mL	90.0657 mL
5 mM	1.8013 mL	9.0066 mL	18.0131 mL
10 mM	0.9007 mL	4.5033 mL	9.0066 mL
50 mM	0.1801 mL	0.9007 mL	1.8013 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

Qiao T, et al. Inhibition of LDH-A by Oxamate Enhances the Efficacy of Anti-PD-1 Treatment in an NSCLC Humanized Mouse Model. Front Oncol. 2021 Mar 30;11:632364.
Su G, Liu J, Duan C, et al.Enteric coronavirus PDCoV evokes a non-Warburg effect by hijacking pyruvic acid as a metabolic hub.Redox Biology.2024: 103112.
Yang Y, et al. Different effects of LDH-A inhibition by oxamate in non-small cell lung cancer cells. Oncotarget. 2014 Dec 15;5(23):11886-96.
Zhao G, Zhu H, Xue X, et al.Feline Calicivirus Infection Manipulates Central Carbon Metabolism.Veterinary Sciences. 2025, 12(2): 138.
Ye W, et al. Oxamate Improves Glycemic Control and Insulin Sensitivity via Inhibition of Tissue Lactate Production in db/db Mice. PLoS One. 2016 Mar 3;11(3):e0150303.