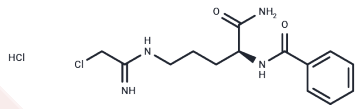
Data Sheet (Cat.No.T10831L)

TargetMol

Cl-amidine hydrochloride

Chemical Properties



CAS No. : 1373232-26-8

Formula: C14H20Cl2N4O2

Molecular Weight: 347.24

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	Cl-amidine hydrochloride is an orally available PAD inhibitor that blocks histone 3 deimination and neutrophil extracellular trap formation and improves survival in septic mice. It induces apoptosis in cancer cells and induces miR-16 to cause cell cycle arrest.
Targets(IC50)	Apoptosis,PAD,MicroRNA
In vitro	**METHODS**: Mouse primary splenocytes were treated with 1 μg/mL LPS and 10 μM Cl-amidine. Cell culture supernatants were collected 6 hours after treatment. TNF-α and pro-inflammatory properties of plasma and cell culture supernatants were determined by ELISA. Cytokine expression. **RESULTS** Cl-amidine decreased the concentration of TNF-α in plasma. At the same time, Cl-amidine treatment could significantly reduce the concentrations of these pro-inflammatory cytokines (IL-1β, IL-6). [1] **METHODS**: HT29 and TK6 cells were treated with Cl-amidine (0, 5, 10, 15, 25, 50 μg/mL, 24 hours) to detect whether Cl-amidine could induce apoptosis of HT29 and TK6 cells. **RESULTS** Cl-amidine induced apoptosis of these cells in a dose-dependent manner. [2]
In vivo	**METHODS**: Cl-amidine (40 mg/kg) was administered intraperitoneally to mice 1 hour after cecal ligation and puncture (CLP) to observe the effect of Cl-amidine on protecting mice from sepsis-induced lethality. **RESULTS** Cl-amidine protected mice from sepsis-induced lethality, and Cl-amidine-treated CLP animals had a higher long-term survival rate. [1]

Solubility Information

Solubility	DMSO: 150 mg/mL (431.98 mM),Sonication is recommended. H2O: 50 mg/mL (143.99 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 mg/mL (2.88 mM),Sonication is recommended. 10% DMSO+90% Saline: 10 mg/mL (28.8 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	2.8799 mL	14.3993 mL	28.7985 mL
5 mM	0.576 mL	2.8799 mL	5.7597 mL
10 mM	0.288 mL	1.4399 mL	2.8799 mL
50 mM	0.0576 mL	0.288 mL	0.576 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

Luo Y, et al. Inhibitors and inactivators of protein arginine deiminase 4: functional and structural characterization. Biochemistry. 2006 Oct 3;45(39):11727-36.
Li B, Xu L, Wang Z, et al.Neutrophil Extracellular Traps Regulate Surgical Brain Injury by Activating the cGAS-STING Pathway.Cellular and Molecular Neurobiology.2024, 44(1): 36.
Chumanevich AA, et al. Suppression of colitis in mice by Cl-amidine: a novel peptidylarginine deiminase inhibitor. Am J Physiol Gastrointest Liver Physiol. 2011 Jun;300(6):G929-38.
Witalison EE,et al. Molecular targeting of protein arginine deiminases to suppress colitis and prevent colon cancer. Oncotarget. 2015 Nov 3;6(34):36053-62.
Biron BM, et al., Cl-Amidine Prevents Histone 3 Citrullination and Neutrophil Extracellular Trap Formation, and Improves Survival in a Murine Sepsis Model. J Innate Immun. 2017;9(1):22-32.