Data Sheet (Cat.No.T22213)

TargetMol

1,4-Diaminobutane Dihydrochloride

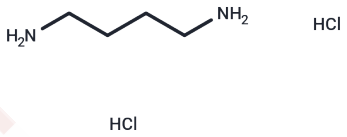
Chemical Properties

CAS No. : 333-93-7

Formula: C4H14Cl2N2

Molecular Weight: 161.07

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	1,4-Diaminobutane Dihydrochloride (1,4-butanediamine Dihydrochloride) has antidepressant and analgesic effects. It regulates plant defense against environmental stresses by directly killing fungi and inducing resistance mechanisms, enhancing post-harvest mango fruit resistance to Colletotrichum gloeosporioides.
Targets(IC50)	Endogenous Metabolite
In vitro	1,4-Diaminobutane Dihydrochloride (100-1000 μM, 24 h) stimulated the growth of CT-26 tumor cells. [1] 1,4-Diaminobutane Dihydrochloride (33.2 mmol/L, 24h) disrupted epithelial compact junction (TJ) integrity in isolated mouse colon tissue. [2] 1,4-Diaminobutane Dihydrochloride (0.25-1 mmol/L) significantly reduced bacterial growth in a concentration-dependent manner.
In vivo	Administration of 1, 4-diaminobutane Dihydrochloride in mice exacerbated colon inflammation and increased intestinal permeability. [2] 1,4-Diaminobutane Dihydrochloride (1% concentration added to drinking water) reduces EcNC101 colonization and tumor development in AOM/DSS mouse models of colorectal cancer. [3]

Solubility Information

Solubility	DMSO: 4.42 mg/mL (27.44 mM),Sonication is recommended. H2O: 40 mg/mL (248.34 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 (6.21 mM),Sonication is recommended. 10% DMSO+90% Saline: 0.44 mg/mL (2.73 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	6.2085 mL	31.0424 mL	62.0848 mL
5 mM	1.2417 mL	6.2085 mL	12.417 mL
10 mM	0.6208 mL	3.1042 mL	6.2085 mL
50 mM	0.1242 mL	0.6208 mL	1.2417 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

Farriol M, et al. Role of putrescine in cell proliferation in a colon carcinoma cell line. Nutrition. 2001 Nov-Dec;17 (11-12):934-8.
Grosheva I, et al. High-Throughput Screen Identifies Host and Microbiota Regulators of Intestinal Barrier Function. Gastroenterology. 2020 Nov;159(5):1807-1823.
Oliero M, et al. Putrescine Supplementation Limits the Expansion of pks+ Escherichia coli and Tumor Development in the Colon. Cancer Res Commun. 2024 Jul 1;4(7):1777-1792.