

Ammonium chloride

Chemical Properties

CAS No. :	12125-02-9
Formula:	ClH4N
Molecular Weight:	53.49
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	Ammonium chloride is a compound commonly used in molecular biology research. As a dipolar compound that regulates pH, it can induce intracellular alkalization and metabolic acidosis, thereby affecting enzyme activity and biological processes. Additionally, ammonium chloride acts as an inhibitor of autophagy and lysosomal function, and can be used to establish kidney stone models.
Targets(IC50)	Autophagy,Antifungal
In vitro	Ammonium Chloride (NH4Cl) reduces the yield of reovirus during infection of mouse L cells.[2]
In vivo	Ammonium Chloride (0.28 M in drinking water; 8-9-week-old C57B/L6 mice) promotes the survival of myocardial cells in vivo by decreasing contractile dysfunction, cardiac hypertrophy, inflammation, apoptosis and autophagy. Ammonium Chloride effectively improved doxorubicin (DOX)-induced cardiomyocyte apoptosis and cardiac dysfunction in mice.[1]

Solubility Information

Solubility	DMSO: 52 mg/mL (972.14 mM),Sonication is recommended. H2O: 80 mg/mL (1495.61 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: 2.5 mg/mL (46.74 mM),Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	18.6951 mL	93.4754 mL	186.9508 mL
5 mM	3.739 mL	18.6951 mL	37.3902 mL
10 mM	1.8695 mL	9.3475 mL	18.6951 mL
50 mM	0.3739 mL	1.8695 mL	3.739 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

Huang X, et al. NH₄Cl treatment prevents doxorubicin-induced myocardial dysfunction in vivo. *Life Sci.* 2019 Jun 15;227:94-100.

Fan Y, Dan W, Que T, et al. CDC20-Mediated Selective Autophagy Degradation of PBRM1 Affects Immunotherapy for Renal Cell Carcinoma. *Advanced Science.* 2024: 2412967.

Canning WM, et al. Ammonium chloride prevents lytic growth of reovirus and helps to establish persistent infection in mouse L cells. *Science.* 1983 Feb 25;219(4587):987-8.

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