

Ammonium chloride, AR, 99.5%

Cat. No.:	HY-Y1269		
CAS No.:	12125-02-9		
Molecular Formula:	ClH ₄ N		
Molecular Weight:	53.49		
Target:	Autophagy		
Pathway:	Autophagy		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (1869.51 mM; Need ultrasonic)
 DMSO : 50 mg/mL (934.75 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	18.6951 mL	93.4754 mL	186.9508 mL
	5 mM	3.7390 mL	18.6951 mL	37.3902 mL
	10 mM	1.8695 mL	9.3475 mL	18.6951 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (46.74 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (46.74 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (46.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ammonium chloride, as a heteropolar compound with pH value regulation, can cause intracellular alkalization and metabolic acidosis thus effecting enzymatic activity and influencing the process of biological system. Ammonium chloride is an autophagy inhibitor^{[1][2]}.

In Vitro

Ammonium chloride (NH₄Cl), a lysosomotropic agent that raises intralysosomal pH, reduces the yield of reovirus during infection of mouse L cells^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Ammonium chloride (0.28 M in drinking water) promotes the survival of myocardial cells in vivo by decreasing contractile dysfunction, cardiac hypertrophy, inflammation, apoptosis and autophagy^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	8-9-week-old C57B/L6 mice ^[1]
Dosage:	0.28 M in drinking water (5 mg/kg doxorubicin once a week for 2 weeks)
Administration:	0.28 M in drinking water (5 mg/kg doxorubicin once a week for 2 weeks)
Result:	Effectively improved doxorubicin (DOX)-induced cardiomyocyte apoptosis and cardiac dysfunction in mice.

CUSTOMER VALIDATION

- Antiviral Res. 2023 Apr 17;105606.
- PLoS Pathog. 2024 Feb 14;20(2):e1011981.
- Virol J. 2022 Sep 20;19(1):151.
- Research Square Preprint. 2023 Jun 22.

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REFERENCES

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

[2]. Canning WM, Fields BN. Ammonium chloride prevents lytic growth of reovirus and helps to establish persistent infection in mouse L cells. Science. 1983;219(4587):987-988.

Caution: Product has not been fully validated for medical applications. For research use only.

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