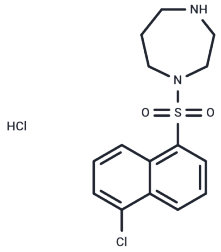
Data Sheet (Cat.No.T16104)

TargetMol

ML-9

Chemical Properties



CAS No. : 105637-50-1

Formula: C15H18Cl2N2O2S

Molecular Weight: 361.29

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	ML-9 suppresses MLCK, PKA, and PKC activity with Ki values of 4, 32, and 54 μM, respectively. ML-9 is a selective and effective inhibitor of Akt kinase, inhibits myosin light-chain kinase (MLCK), and stromal interaction molecule 1 (STIM1) activity. ML-9 causes autophagy by stimulating autophagosome formation and inhibiting their degradation.
Targets(IC50)	Calcium Channel,Akt,Myosin
In vitro	ML9 (50?μM; 1-4?hours) obviously enhances cleaved caspase-3 levels, reduced STIM1 protein levels by about 42%. ML9 (0-100?μM; 0-24?hours) has no reduction in cardiomyocyte viability, 50-100?μM obviously causes cell death [2].

Solubility Information

Solubility	DMSO: 25 mg/mL (69.2 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 mg/mL (5.54 mM),Sonication is recommended. *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	2.7679 mL	13.8393 mL	27.6786 mL
5 mM	0.5536 mL	2.7679 mL	5.5357 mL
10 mM	0.2768 mL	1.3839 mL	2.7679 mL
50 mM	0.0554 mL	0.2768 mL	0.5536 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

Ito S, et al. ML-9, a myosin light chain kinase inhibitor, reduces intracellular Ca2+ concentration in guinea pig trachealis.Eur J Pharmacol. 2004 Feb 23;486(3):325-33.
Sun L, Sun L, Li X, et al. A Novel Tigecycline Adjuvant ML-7 Reverses the Susceptibility of Tigecycline-Resistant Klebsiella pneumoniae. Frontiers in cellular and infection microbiology. 2022: 1341.
Shaikh S, et al. The STIM1 inhibitor ML9 disrupts basal autophagy in cardiomyocytes by decreasing lysosome content.Toxicol In Vitro. 2018 Apr;48:121-127.
Kondratskyi A1, et al.Identification of ML-9 as a lysosomotropic agent targeting autophagy and cell death.Cell Death Dis. 2014 Apr 24;5:e1193.