Data Sheet (Cat.No.T0030)

TargetMol

Bupivacaine hydrochloride

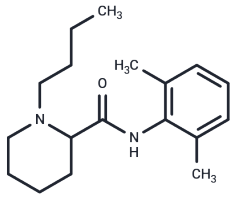
Chemical Properties

CAS No. : 18010-40-7

Formula: C18H28N2O·HCl

Molecular Weight: 324.89

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	Bupivacaine hydrochloride (Vivacaine) is a long-acting, amide-type local anesthetic. Bupivacaine hydrochloride reversibly binds to specific sodium ion channels in the neuronal membrane, resulting in a decrease in the voltage-dependent membrane permeability to sodium ions and membrane stabilization; inhibition of depolarization and nerve impulse conduction; and a reversible loss of sensation.
Targets(IC50)	Calcium Channel,iGluR,Potassium Channel,Sodium Channel
In vitro	Bupivacaine can induce calcium release from the sarcoplasmic reticulum (SR) in rats and suppress the SR's uptake of calcium.
In vivo	In vitro, Bupivacaine exhibits cytotoxic effects on bovine articular chondrocytes after an exposure of 15 to 30 minutes. It acts on isolated mitochondria as an uncoupler of oxygen consumption and adenosine diphosphate phosphorylation. Concentration-dependent mitochondrial depolarization and pyridine nucleotide oxidation are induced by Bupivacaine in these isolated mitochondria. Additionally, Bupivacaine triggers the opening of the permeability transition pore (PTP), a cyclosporin A-sensitive inner membrane channel pivotal in various forms of cell death.

Solubility Information

Solubility	DMSO: 16.67 mg/mL (51.31 mM),Sonication is recommended. H2O: 21 mg/mL (64.64 mM),Sonication is recommended. Ethanol: 60 mg/mL (184.68 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 (6.16 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	3.078 mL	15.3898 mL	30.7796 mL
5 mM	0.6156 mL	3.078 mL	6.1559 mL
10 mM	0.3078 mL	1.539 mL	3.078 mL
50 mM	0.0616 mL	0.3078 mL	0.6156 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

Sheets MF, et al. Trends Cardiovasc Med. 2010 Jan;20(1):16-21.