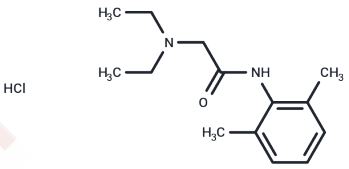
Data Sheet (Cat.No.T1144)

TargetMol

Lidocaine hydrochloride

Chemical Properties



CAS No. :	73-78-9
Formula:	C14H23ClN2O
Molecular Weight:	270.798
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	Lidocaine hydrochloride (Lignocaine hydrochloride) is a local anesthetic and cardiac depressant used as an antiarrhythmic agent. Its actions are more intense and its effects more prolonged than those of PROCAINE but its duration of action is shorter than that of BUPIVACAINE or PRILOCAINE.
Targets(IC50)	Apoptosis,ERK,NF-κB,MEK,Sodium Channel
In vitro	Lidocaine above 1.25 g/l reduces cellular viability and triggers apoptosis in HCE cells in a time- and dose-dependent manner. Lidocaine-induced apoptosis is caspase dependent and may be related to mitochondrial pathway[1]. Lidocaine, at the level of tissue concentration under topical or local administration, also has a direct inhibitory effect on the activity of epidermal growth factor receptor (EGFR), which is a potential target for antiproliferation in cancer cells[3].
In vivo	Intravenous administration of the local anaesthetic lidocaine has been used to treat neuropathic pain for several decades and significantly improves postoperative pain associated with complex spine surgery and cholecystectomy. It is well established that lidocaine used for regional anaesthesia blocks impulses in peripheral nerves by inhibiting voltage-gated sodium (Na+) channels. Intravenous lidocaine has an analgesic effect on mechanical noxious response, decreases the spinal noxious response induced by peripheral pinch stimuli and the frequency of spontaneous excitatory postsynaptic currents(EPSCs) without changing their amplitude. It has no effect on spontaneous inhibitory postsynaptic currents and produces an outward current in SG neurons[2].
Cell Research	Cells at logarithmic phase are treated with lidocaine hydrochloride at concentrations (w/v) from 10 to 0.15625 g/l in step dilutions. HCE cells without lidocaine treatment are used as controls. The morphology and growing status of the cells are monitored every 4 hr.(Only for Reference)

Solubility Information

Solubility	H2O: 50 mg/mL (184.64 mM),Sonication is recommended. DMSO: 250 mg/mL (923.2 mM),Sonication is recommended. Ethanol: 54 mg/mL (199.41 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 (7.39 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	3.6928 mL	18.4638 mL	36.9276 mL
5 mM	0.7386 mL	3.6928 mL	7.3855 mL
10 mM	0.3693 mL	1.8464 mL	3.6928 mL
50 mM	0.0739 mL	0.3693 mL	0.7386 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

Yu HZ, et al. Basic Clin Pharmacol Toxicol. 2014, 114(4):352-9.
Huang Z, Wei P, Gan L, et al. Protective effects of different anti-inflammatory drugs on tracheal stenosis following injury and potential mechanisms. Molecular Medicine Reports. 2021, 23(5): 1-11
Kurabe M, et al. Sci Rep. 2016, 6:26253.
Sakaguchi M, et al. Anesth Analg. 2006, 102(4):1103-7.
Huang Z, Wei P, Gan L, et al. Protective effects of different anti-inflammatory drugs on tracheal stenosis following injury and potential mechanisms[J]. Molecular Medicine Reports. 2021, 23(5): 1-11.