Data Sheet (Cat.No.T0802)

TargetMol

Procaine hydrochloride

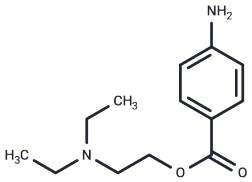
Chemical Properties

CAS No. : 51-05-8

Formula: C13H20N2O2·HCl

Molecular Weight: 272.77

Storage: Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.



Biological Description

Description	Procaine hydrochloride (Novocaine HCl) is the hydrochloride salt form of procaine, a benzoic acid derivative with local anesthetic and antiarrhythmic properties. Procaine binds to and inhibits voltage-gated sodiumchannels, thereby inhibiting the ionic flux required for the initiation and conduction of impulses. In addition, this agent increases electrical excitation threshold, reduces rate of rise of action potential and slows nerve impulse propagation thereby causing loss of sensation.
Targets(IC50)	Histone Demethylase,5-HT Receptor,Antibacterial,NMDAR,AChR,DNA/RNA Synthesis, Sodium Channel
In vitro	In anesthetized cats, Procaine (15 mg/kg) enhanced the cellular activity in the ventral hippocampal formation of the amygdala, the ventromedial hypothalamus, the septal nucleus, and the neocortex of the temporal lobe. Procaine acts as a stimulant for marginal system cells. Furthermore, Procaine facilitates the conduction of evoked stimulatory activity from the amygdala to the ventromedial hypothalamus.
In vivo	Procaine exhibits the ability to bind to or antagonize nicotinic acetylcholine receptors and the 5-HT(serotonin) receptor-ion channel complex, as well as N-methyl-D-aspartate (NMDA) receptors. Its primary mechanism of action involves the inhibition of sodium ion influx by affecting the voltage-gated sodium channels on the neuronal cell membranes of peripheral nerves. This disruption of sodium ion flow prevents the generation of action potentials, thereby inhibiting signal transduction. Studies suggest that the receptor sites targeted by procaine are located on the cytoplasmic (internal) portion of the sodium channels.

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 55 mg/mL (201.64 mM),Sonication is recommended. H2O: 50 mg/mL (183.3 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6661 mL	18.3305 mL	36.6609 mL
5 mM	0.7332 mL	3.6661 mL	7.3322 mL
10 mM	0.3666 mL	1.833 mL	3.6661 mL
50 mM	0.0733 mL	0.3666 mL	0.7332 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

Bräu ME ME, et al. Anesth Analg, 1998, 87(4), 885-889.
Hahnenkamp K, et al. Br J Anaesth, 2006, 96(1), 77-87.
Wang H, et al. Eur J Pharmacol, 2010, 630(1-3), 29-33.
Fan P, et al. Neuropharmacology, 1994, 33(12), 1573-1579.
Zahradníková A, et al. Biophys J. 1993 Apr;64(4):1991-12003.