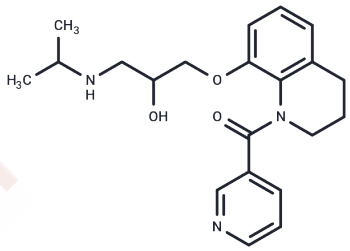
Data Sheet (Cat.No.T4539)

TargetMol

Nicainoprol

Chemical Properties



CAS No. : 76252-06-7

Formula: C21H27N3O3

Molecular Weight: 369.46

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	Nicainoprol (RU-42924) is a fast-sodium-channel blocking drug. Nicainoprol is a potent antiarrhythmic agent.
Targets(IC50)	Sodium Channel
In vitro	The antiarrhythmic agent Nicainoprol is a fast-sodium-channel blocking drug that also protects isolated rat hearts against reperfusion arrhythmias. However, it is without beneficial effects on cardiac hemodynamics and biochemical parameters, in contrast to the ACE inhibitor[1].
In vivo	The study investigates the efficacy of Nicainoprol, a novel antiarrhythmic agent, in mitigating coronary occlusion and reperfusion arrhythmias in both isolated working rat hearts and anesthetized rats. In isolated hearts, Nicainoprol demonstrates a concentration-dependent protective effect against reperfusion arrhythmia without altering cardiodynamics, except for a decrease in heart rate at the highest tested concentration (100 μM). Key cardiac biochemical markers (lactate dehydrogenase and creatine kinase) and metabolite levels (glycogen, lactate, ATP, and creatine phosphate) remain unchanged by Nicainoprol treatment. In anesthetized rats, Nicainoprol administration (5 and 10 mg/kg, i.v.) significantly diminishes the incidence of premature ventricular complexes and ventricular tachycardia during the early post-occlusion phase (0-30 minutes), and entirely prevents ventricular fibrillation. During reperfusion, Nicainoprol-treated rats show a marked reduction in premature ventricular complexes compared to control rats, alongside reductions in heart rate, blood pressure, and myocardial oxygen consumption. Furthermore, Nicainoprol significantly decreases the ratio of infarct mass to ventricular mass by 20% and 28% at doses of 5 mg/kg and 10 mg/kg, respectively, indicating potential benefits in preventing and treating arrhythmias associated with acute myocardial infarction.

Solubility Information

Solubility	DMSO: 55 mg/mL (148.87 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7067 mL	13.5333 mL	27.0665 mL
5 mM	0.5413 mL	2.7067 mL	5.4133 mL
10 mM	0.2707 mL	1.3533 mL	2.7067 mL
50 mM	0.0541 mL	0.2707 mL	0.5413 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

Linz W, et al. Cardiac arrhythmias are ameliorated by local inhibition of angiotensin formation and bradykinin degradation with the converting-enzyme inhibitor ramipril. Cardiovasc Drugs Ther. 1989 Dec;3(6):873-82.
Martorana PA, et al. Effects of nicainoprol on reperfusion arrhythmia in the isolated working rat heart and on ischemia and reperfusion arrhythmia and myocardial infarct size in the anesthetized rat. Eur J Pharmacol. 1987 Nov 17;143(3):391-401.