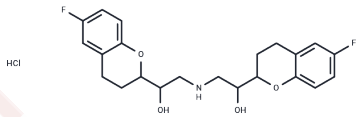
Data Sheet (Cat.No.T0154)

TargetMol

Nebivolol hydrochloride

Chemical Properties



CAS No. : 152520-56-4

Formula: C22H25F2NO4·HCl

Molecular Weight: 441.90

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	Nebivolol hydrochloride (R 065824 hydrochloride) is a cardioselective ADRENERGIC BETA-1 RECEPTOR ANTAGONIST (beta-blocker) that functions as a VASODILATOR through the endothelial L-arginine/ NITRIC OXIDE system. It is used to manage HYPERTENSION and chronic HEART FAILURE in elderly patients.
Targets(IC50)	Apoptosis,Adrenergic Receptor
In vitro	Nebivolol treatment of rats with myocardial infarction lowered mean blood pressure by a small amount. Nebivolol reduced myocardial apoptosis in rats with myocardial infarction when administered intravenously for 10 minutes followed by oral administration.
In vivo	Nebivolol reduced the proliferation of coronary smooth muscle cells (haCSMCs) and endothelial cells (haECs) in a concentration- and time-dependent manner.Nebivolol acted with high affinity and selectivity at the beta 1-adrenergic receptor site in the preparation of rabbit lung membranes.Nebivolol treatment of haCSMCs for 7 days significantly inhibited cell proliferation (IC50 ~ 10 μM). Nebivolol treated haCSMCs for 7 days, significantly inhibited cell proliferation (IC50: 6.1 μM). nebivolol treated haCSMCs for 48 hours, the apoptosis rate was 23%, and reduced the number of S-phase cells.
Cell Research	Cells are exposed to different concentrations of Nebivolol (10-7~10-5 M) for 1, 2, 4, 7 and 14 days. Cell proliferation is analyzed by bromodeoxyuridine (BrdU) incorporation, and cell apoptosis is detected by PI or annexin V staining.(Only for Reference)

Solubility Information

Solubility	Ethanol: 4.42 mg/mL (10 mM),Sonication is recommended. DMSO: 60 mg/mL (135.78 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 (4.53 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	2.263 mL	11.3148 mL	22.6296 mL
5 mM	0.4526 mL	2.263 mL	4.5259 mL
10 mM	0.2263 mL	1.1315 mL	2.263 mL
50 mM	0.0453 mL	0.2263 mL	0.4526 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

Pauwels PJ, et al. Mol Pharmacol, 1988, 34(6), 843-851.
Bei M, Hao S, Lin K, et al.Splicing factor TRA2A contributes to esophageal cancer progression via a noncanonical role in lncRNA m6A methylation.Cancer Science.2023
Brixius K, et al. Br J Pharmacol, 2001, 133(8), 1330-1338.
Brehm BR, et al. Cardiovasc Res, 2001, 49(2), 430-439.
Mercanoglu G, et al. Circ J, 2008, 72(4), 660-670.