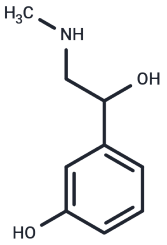
Data Sheet (Cat.No.T0453)

TargetMol

Phenylephrine hydrochloride

Chemical Properties



CAS No. : 61-76-7

Formula: C9H14ClNO2

Molecular Weight: 203.67

Appearance: no data available

Storage: keep away from direct sunlight,store under nitrogen, store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Phenylephrine hydrochloride (NCI-c55641) is a selective agonist of the α1-adrenergic receptor.
Targets(IC50)	Endogenous Metabolite,Adrenergic Receptor
In vivo	Phenylephrine protects cardiomyocytes from serum deprivation and hypoxia. It induces rapid translocation of PKC-epsilon (EC 50= 0.9 mM), with a lesser fraction lost compared to ET-1, and prevents downregulation of Bcl-X and Bcl-2 mRNA/proteins while inducing hypertrophic growth. Phenylephrine dose-dependently increases contractile force in hyperosmotic cells at pCa 7, which is reversible upon phentolamine addition. The protective effects mediated by Phenylephrine are inhibited by the PI 3-kinase inhibitor wortmannin and mimicked by the caspase-9 peptide inhibitor LEHD-fmk. It stimulates phosphoinositide hydrolysis, cellular growth, and expression of various genes associated with cardiac hypertrophy, such as atrial natriuretic factor. Phenylephrine-induced NOi release requires stimulation by IP3 and PI-3K/Akt-dependent calcium signaling, and it also enhances localized sarcoplasmic reticulum calcium release through IP3-dependent signaling. Induction of NOi release by Phenylephrine is inhibited by 1 mM prazocin, 10 mM W-7, 10 mM L-NIO, 10 mM LY294002, 2 mM H-89, 5 mM thapsigargin, 10 mM ryanodine, 2 mM 2-APB, or 10 mM xestospongin C. Additionally, 1 μM Phenylephrine significantly enhances HGF-induced hepatocyte DNA synthesis and proliferation. Finally, 1 mM Phenylephrine reversibly increases peak I(Ca,L) by 51.3% (N=40) and shifts the activation voltage by -10 mV.

Solubility Information

Solubility	DMSO: 75 mg/mL (368.24 mM),Sonication is recommended. H2O: 20.4 mg/mL (100.16 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.9099 mL	24.5495 mL	49.099 mL
5 mM	0.982 mL	4.9099 mL	9.8198 mL
10 mM	0.491 mL	2.455 mL	4.9099 mL
50 mM	0.0982 mL	0.491 mL	0.982 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.

Reference

Clerk A, et al. J Biol Chem,1994, 269(52), 32848-32857.
Collins EM, et al. Am J Physiol,1992, 262(3 Pt 2), H754-H762.
Zhu H, et al. Cell Death Differ,2000, 7(9), 773-784.
McDonough PM, et al. Am J Physiol,1993, 264(2 Pt 2), H625-H630.
Kimura M, et al. J Pharmacol Exp Ther,1997, 282(3), 1146-1154.
Wang J, et al. Phenylephrine promotes cardiac fibroblast proliferation through calcineurin-NFAT pathway. Front Biosci (Landmark Ed). 2016 Jan 1;21:502-13.