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Lieferung & Zahlungsart

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Higenamine

Cat. No.: HY-N2037

CAS No.: 5843-65-2

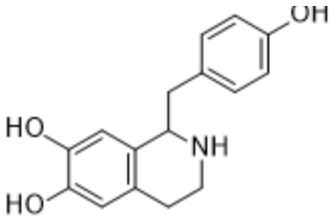
Molecular Formula: $C_{16}H_{17}NO_3$

Molecular Weight: 271.31

Target: Adrenergic Receptor; Apoptosis; MAP3K; MDM-2/p53; ROS Kinase

Pathway: GPCR/G Protein; Neuronal Signaling; Apoptosis; MAPK/ERK Pathway; Protein Tyrosine Kinase/RTK

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (368.58 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration \ Solvent Mass	1 mg	5 mg	10 mg
	1 mM	3.6858 mL	18.4291 mL	36.8582 mL
	5 mM	0.7372 mL	3.6858 mL	7.3716 mL
	10 mM	0.3686 mL	1.8429 mL	3.6858 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.21 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.21 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Higenamine (Norcoclaurine), a β2-AR agonist with antioxidant capability, is a key component of the Chinese herb aconite root that prescribes for treating symptoms of heart failure in the oriental Asian countries. Higenamine is also a α1-adrenergic receptor antagonist with hypotensive effect. is a selective LSD1 inhibitor (IC_{50}=1.47 μM) that can be isolated from aconite. Higenamine hydrochloride has anti-inflammatory and antibacterial activity. Higenamine protects myocyte Apoptosis and ischemia/reperfusion (I/R) injury through selective activation of beta2-adrenergic receptor (β2-AR). Higenamine also reduces I/R-induced myocardial infarction in mice. Higenamine can attenuate IL-1β-induced Apoptosis through ROS-mediated PI3K/Akt signaling pathway. Higenamine protects brain cells from oxygen deprivation. Higenamine can promote bone formation in osteoporosis through the SMAD2/3 pathway. Higenamine can be used to study cancer, inflammation, cardiorenal syndrome and other diseases[1][2][3][4][5][6][7][8][9][10][11].

IC_{50} & Target	β adrenergic receptor

In Vitro

Higenamine (3-100 μM; 72 h) can inhibit the differentiation of MV4-11 and MOLM-13 cells by inhibiting the activity of LSD1[1].
Higenamine (1-100μM; 8 h) can enhance the activity of HO-1 in C6 cells and protect brain cells from cell hypoxia damage [2].
Higenamine (10-50 μM; 8 h) can inhibit apoptosis in C6 cells[2].
Higenamine (10-40 μM; 24 h) can inhibit the production of IL-1β-induced ROS and activate the ROS-mediated PI3K/Akt signaling pathway, which has anti-apoptotic activity in HNPCs[3].
Higenamine (0.08-250 μM; 0.5-24 h) promotes phosphorylation of SMAD2/3 in a time- and dose-dependent manner in BMSCs [6].
Higenamine (0-120 μM, 24 h) reverses H_2O_2 (250 μM, 24 h) induced cell death and apoptosis in neonatal rat ventricular myocytes (NRVMs)[7].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	MV4-11, MOLM-13
Concentration:	3 μM, 10 μM, 30 μM, 100 μM
Incubation Time:	72 h
Result:	Could up-regulate the expression levels of LSD1 substrate H3K4me1 and H3K4me2 in a dose-dependent manner, but did not affect the expression levels of H3K4me3, H3 and LSD1. Promoted P53 expression in a dose-dependent manner.

Western Blot Analysis[2]

Cell Line:	C6
Concentration:	1 μM, 5μM, 10 μM, 50 μM,100 μM
Incubation Time:	8 h
Result:	Increased HO-1 expression in a concentration-dependent manner under hypoxia and normoxia conditions.

Real Time qPCR[1]

Cell Line:	MV4-11, MOLM-13
Concentration:	3 μM, 10 μM, 30 μM, 100 μM
Incubation Time:	72 h
Result:	Significantly down-regulated the expression levels of HoxA9 and Meis1 in leukemia cells in a dose-dependent manner.

Apoptosis Analysis[7]

Cell Line:	NRVMs
Concentration:	0-120 μM
Incubation Time:	24 h
Result:	Dose dependently attenuated H2O2-stimulated early and late apoptosis of NRVMs.

In Vivo	Higenamine hydrochloride (10 mg/kg; Intraperitoneal injection; Single dose) can significantly reduce the inflammation and

infarct size of cerebral ischemic injury caused by middle cerebral artery occlusion (MCAO) in Sprague-Dawley rats[2].
Higenamine hydrochloride (0.5-4.5 mg/kg; Single dose) improves cardiac and renal function in rats with cardio-renal syndrome (CRS) and alleviates cardiac and renal fibrosis by targeting ASK1/MAPK (ERK, P38)/NF-kB signaling pathway in Sprague-Dawley rats[4].
Higenamine hydrochloride (20 mg/kg-30 mg/kg; Intraperitoneal injection; Once daily for 60 days) promotes bone formation and prevents accelerated bone loss in SAMP6 mice[6].
Higenamine (10 mg/kg, i.p., 2 h prior to the surgery) protects against I/R-induced myocardial infarction in mice bearing ischemia/reperfusion injury[7].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Spontaneous osteoporosis SAMP6 mice model[6]
Dosage:	10 mg/kg, 20 mg/kg
Administration:	Intraperitoneal injection (i.p.);Once daily for 60 days
Result:	Significantly increased the expression of P1NP and OCN (P1NP and OCN are markers of bone formation).

Animal Model:	Mice bearing ischemia/reperfusion injury[7]
Dosage:	10 mg/kg
Administration:	i.p., 2 h prior to the surgery
Result:	Decreased the myocardial infarct areas (MI) and increased myocyte survival in mice bearing ischemia/reperfusion injury.

CUSTOMER VALIDATION

- Nutrients. 2024 May 22.
- J Inflamm Res. 2024 Oct 14:17:7295-7310.
- J Pharmaceut Biomed. 2020, 113870.

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