Anabasine

Cat. No.: HY-B1532

CAS No.: 494-52-0

Molecular Formula: $C_{10}H_{14}N_2$

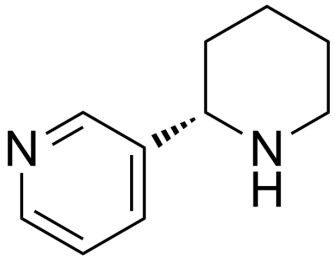
Molecular Weight: 162.23

Target: nAChR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (616.41 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	6.1641 mL	30.8204 mL	61.6409 mL
	5 mM	1.2328 mL	6.1641 mL	12.3282 mL
	10 mM	0.6164 mL	3.0820 mL	6.1641 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 (15.41 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (15.41 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (15.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Anabasine ((S)-Anabasine) is an alkaloid that found as a minor component in tobacco (Nicotiana). Anabasine is a botanical pesticide nicotine, acts as a full agonist of nicotinic acetylcholine receptors (nAChRs). Anabasine induces depolarization of TE671 cells endogenously expressing human fetal muscle-type nAChRs (EC_{50}=0.7 μM)[1][2].

IC_{50} & Target

nicotinic receptor[1]

In Vivo

Anabasine significantly reverses the impairment at the 0.2 mg/kg ($p<0.05$) and 2 mg/kg doses ($p<0.025$). Anabasine does not have any significant effects on response latency when administered alone. The 0.06 mg/kg Anabasine dose, in fact, significantly ($p<0.05$) exacerbates the dizocilpine-induced impairment. None of these Anabasine doses affects choice

accuracy on their own. Individual dose comparisons show that the 0.06 mg/kg Anabasine dose plus dizocilpine (6.7±2.6) causes a significant ($p<0.05$) increase in non-response trials compare with dizocilpine alone (2.1±0.8)[1].

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

PROTOCOL

Animal Administration [1]

Adult (age range 4 to 16 months) female Sprague-Dawley rats are used in this study. One group of rats (N=12) is trained on the radial arm maze test of working and reference memory and undergo tests of an acute dose-response of Anabasine (0.02, 0.2, 1 and 2 mg/kg). Then, two doses of Anabasine (0.2 and 2 mg/kg) are tested alone or in combination with the glutamate NMDA antagonist dizocilpine (0.05 mg/kg). The saline vehicle is used as vehicle control and dizocilpine alone is used as an impaired control. All conditions are given to each rat in a repeated measures counterbalanced design[1].

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

REFERENCES

[1]. Levin ED, et al. Effects of tobacco smoke constituents, anabasine and anatabine, on memory and attention in female rats. J Psychopharmacol. 2014 Oct;28(10):915-22.

[2]. Benedict T Green, et al. Actions of piperidine alkaloid teratogens at fetal nicotinic acetylcholine receptors. Neurotoxicol Teratol. May-Jun 2010;32(3):383-90.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA