Cytisinicline

Cat. No.: HY-N0175

CAS No.: 485-35-8

Molecular Formula: $C_{11}H_{14}N_2O$

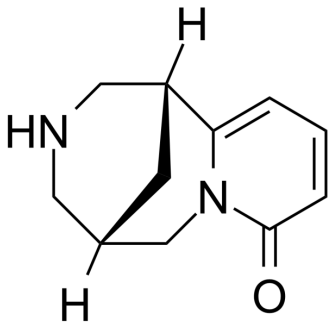
Molecular Weight: 190.24

Target: nAChR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (657.06 mM; Need ultrasonic)

H_2O : ≥ 100 mg/mL (525.65 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.2565 mL	26.2826 mL	52.5652 mL
5 mM	1.0513 mL	5.2565 mL	10.5130 mL
10 mM	0.5257 mL	2.6283 mL	5.2565 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: ≥ 2.08 mg/mL (10.93 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (10.93 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (10.93 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cytisinicline (Cytisine) is an alkaloid. Cytisinicline (Cytisine) is a partial agonist of α4β2 nAChRs[1], and partial to full agonist at β4 containing receptors and α7 receptors[2]. Has been used medically to help with smoking cessation[3].

IC_{50} & Target

α4β2 nAChRs[1].

In Vitro	Cytisinicline (Cytisine) (2.5, 5 and 10 mM) is capable of inducing apoptosis in HepG2 cells[4]. Treatment with Cytisinicline (Cytisine) increases the percentage of cells in the sub-G_1 phase ($P<0.01$). The preincubation of HepG2 cells with Cytisinicline (Cytisine) (2.5, 5 and 10 mM) significantly increases the sub-G_1 cell population[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cytisinicline (Cytisine) (5 mg/kg, i.p.) eat less and gain less weight than those that receive the vehicle[2]. Total pellet intake increases during Cytisinicline (Cytisine) substitution relative to nicotine and animals self-administered Cytisine significantly less than nicotine[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Ethnopharmacol. 2021 Nov 2;114796.

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REFERENCES

[1]. Pabreza LA, et al. [3H]cytisine binding to nicotinic cholinergic receptors in brain. Mol Pharmacol. 1991 Jan;39(1):9-12.

[2]. Grebenstein PE, et al. The effects of noncontingent and self-administered cytisine on body weight and meal patterns in male Sprague-Dawley rats. Pharmacol Biochem Behav. 2013 Sep;110:192-200.

[3]. Walker N, et al. Cytisine versus nicotine for smoking cessation. N Engl J Med. 2014 Dec 18;371(25):2353-62.

[4]. Yu L, et al. Cytisine induces endoplasmic reticulum stress caused by calcium overload in HepG2 cells. Oncol Rep. 2018 Mar;39(3):1475-1484.

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