Lobeline hydrochloride

Cat. No.: HY-B0979

CAS No.: 134-63-4

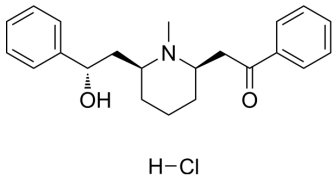
Molecular Formula: $C_{22}H_{28}ClNO_2$

Molecular Weight: 373.92

Target: nAChR; Dopamine Transporter

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 6 mg/mL (16.05 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6744 mL	13.3718 mL	26.7437 mL
	5 mM	0.5349 mL	2.6744 mL	5.3487 mL
	10 mM	0.2674 mL	1.3372 mL	2.6744 mL

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

BIOLOGICAL ACTIVITY

Description

Lobeline (α-Lobeline) hydrochloride is a brain-penetrant nicotinic receptor agonist. Lobeline hydrochloride increases dopamine (DA) release by inhibiting DA uptake into synaptic vesicles, and altering presynaptic DA storage. Lobeline hydrochloride is effective in smoking cessation[1][2].

In Vitro

Lobeline (0.1-100 μM) hydrochloride evokes [^{3}H]DA overflow calcium-independently[1].
Lobeline hydrochloride inhibits [^{3}H]DA uptake into synaptosomes (IC_{50}=80 μM) and vesicles (IC_{50}=0.88 μM)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Lobeline (0.3-3.0 mg/kg; s.c.; single dose) hydrochloride decreases d-methamphetamine self-administration in rats model[3].
Lobeline (3 mg/kg; s.c.; 7 times during 7 sessions) hydrochloride specifically decreases responding for d-Methamphetamine in a noncompetitive manner, and increases tolerance development[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Sprague-Dawley rats (200-250 g)[3]

Dosage:	0.3 mg/kg, 1.0 mg/kg, and 3.0 mg/kg for acute administration; 3 mg/kg for chronic administration
Administration:	Subcutaneous injection; 15 min prior to measurement, or every 15 min for 7 sessions; separated by 2 intervening maintenance days of d-methamphetamine (0.05 mg/kg/infusion) self-administration
Result:	Decreased d-methamphetamine Self-Administration.

REFERENCES

[1]. Teng L, et al. Lobeline and nicotine evoke [3H]overflow from rat striatal slices preloaded with [3H]dopamine: differential inhibition of synaptosomal and vesicular [3H]dopamine uptake. J Pharmacol Exp Ther. 1997 Mar;280(3):1432-44.

[2]. Monzurul Amin Roni, et al. Lobeline attenuates ethanol abstinence-induced depression-like behavior in mice. Alcohol. 2017 Jun:61:63-70.

[3]. Harrod SB, et al. Lobeline attenuates d-methamphetamine self-administration in rats. J Pharmacol Exp Ther. 2001 Jul;298(1):172-9.

Caution: Product has not been fully validated for medical applications. For research use only.

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