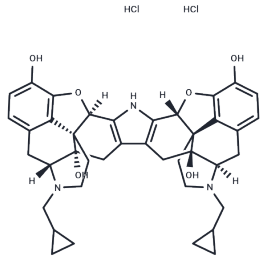
Data Sheet (Cat.No.T12241)

TargetMol

Norbinaltorphimine dihydrochloride

Chemical Properties



CAS No. : 113158-34-2

Formula: C40H45Cl2N3O6

Molecular Weight: 734.71

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Norbinaltorphimine dihydrochloride is a selective and potent κ opioid receptor antagonist that induces itch-associated responses in mice.
Targets(IC50)	Opioid Receptor
In vitro	Norbinaltorphimine dihydrochloride reversibly antagonizes the effects of κ agonists with pA2 values ranging from 10.2 to 10.4. However, it is important to note that Norbinaltorphimine dihydrochloride is much less potent as an antagonist at μ and δ receptors, where the pA2 values are 7.4-7.6 and 7.6-7.8, respectively[3].
In vivo	In adolescent rats, Norbinaltorphimine dihydrochloride exhibits weak and inconsistent effects on THC-induced taste avoidance. Notably, the impact of Norbinaltorphimine dihydrochloride varies based on dose and trial, as it both attenuates and strengthens taste avoidance. However, these effects are limited, with no significant influence on the final one-bottle avoidance and no observable effects on the two-bottle preference test. Interestingly, Norbinaltorphimine dihydrochloride demonstrates no effect on THC-induced taste avoidance in adult rats as well[2].Furthermore, when administered as a pretreatment,Norbinaltorphimine dihydrochloride significantly attenuates stress-induced reinstatement of nicotine-conditioned place preference (CPP). However, it is important to note that Norbinaltorphimine dihydrochloride has no discernible effect on nicotine-primed reinstatement[1].

Solubility Information

Solubility	DMSO: 150 mg/mL (204.16 mM),Sonication is recommended. H2O: 20 mg/mL (27.22 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (4.49 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3611 mL	6.8054 mL	13.6108 mL
5 mM	0.2722 mL	1.3611 mL	2.7222 mL
10 mM	0.1361 mL	0.6805 mL	1.3611 mL
50 mM	0.0272 mL	0.1361 mL	0.2722 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Jackson KJ, et al. Effects of the kappa opioid receptor antagonist, norbinaltorphimine, on stress and drug-induced reinstatement of nicotine-conditioned place preference in mice. Psychopharmacology (Berl). 2013 Apr;226(4):763-8.

Flax SM, et al. Effect of norbinaltorphimine on Δ^9-tetrahydrocannabinol (THC)-induced taste avoidance in adolescent and adult Sprague-Dawley rats. Psychopharmacology (Berl). 2015 Sep;232(17):3193-201.

Birch PJ, et al. Norbinaltorphimine: antagonist profile at kappa opioid receptors. Eur J Pharmacol. 1987 Dec 15;144 (3):405-8.