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## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
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# Norbinaltorphimine dihydrochloride

**Cat. No.:** HY-100903

**CAS No.:** 113158-34-2

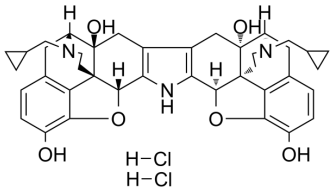
**Molecular Formula:** $C_{40}H_{45}Cl_2N_3O_6$

**Molecular Weight:** 734.71

**Target:** Opioid Receptor

**Pathway:** GPCR/G Protein; Neuronal Signaling

**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 (136.11 mM; Need ultrasonic)
$H_2O$ : 33.33 mg/mL (45.36 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 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 |

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 (3.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (3.40 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Norbinaltorphimine dihydrochloride is a potent and selective κ opioid receptor antagonist.

**$IC_{50}$ & Target**

κ opioid receptor[1]

**In Vitro**

Norbinaltorphimine reversibly antagonize the effects of κ agonists with pA2 values of 10.2-10.4. Norbinaltorphimine is much less potent as an antagonist at μ and δ receptors, pA2 values are 7.4-7.6 and 7.6-7.8, respectively[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Norbinaltorphimine has weak and inconsistent effects on THC-induced taste avoidance in adolescent rats in that Norbinaltorphimine both attenuates and strengthens taste avoidance dependent on dose and trial. Norbinaltorphimine has

limited impact on the final one-bottle avoidance and no effects on the two-bottle preference test. Interestingly, Norbinaltorphimine has no effect on THC-induced taste avoidance in adult rats as well[2]. Norbinaltorphimine pretreatment significantly attenuates stress-induced reinstatement of nicotine-CPP, but has no effect on nicotine-primed reinstatement[3].

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

## PROTOCOL

**Animal Administration** [2][3]

Rats[2]

Norbinaltorphimine is dissolved in sterile $H_2O$ at a concentration of 15 mg/mL and administered subcutaneously (SC) at a dose of 15 mg/kg. Male Sprague Dawley rats are ranked according to average water consumption on all habituation cycles and assigned to one of two groups [Norbinaltorphimine (n=42) and Vehicle (n=42)], such that mean water intake is comparable among groups. On PND 34 (approximately 24 h prior to conditioning, see below), subjects assigned to the Norbinaltorphimine group are injected with Norbinaltorphimine (15 mg/kg) and subjects assigned to the Vehicle group are injected with the Norbinaltorphimine vehicle at an equal volume[2].

Mice[3]

Mice are conditioned with 0.5 mg/kg nicotine, injected subcutaneously (s.c.) for 3 days and tested in the nicotine-conditioned place preference (CPP) model. After 3 days extinction, Norbinaltorphimine (10 mg/kg, s.c.) is administered 16 h prior to a priming dose of nicotine (0.1 mg/kg, s.c.), and mice are tested in the CPP model for nicotine-induced reinstatement of CPP. A separate group of mice is subjected to a 2-day modified forced swim test (FST) paradigm to induce stress after 3 days extinction from CPP. Mice are given vehicle or Norbinaltorphimine (10 mg/kg, s.c.) 16 h prior to each FST session[3].

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

## CUSTOMER VALIDATION

- Front Immunol. 2021 Jul 7;12:692286.
- Front Cell Neurosci. 2022 Jun 2;16:894886.
- Aging. 2021 May 20;13(10):14355-14371.

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## REFERENCES


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

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

[3]. 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.

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

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