# (±)-Vesamicol hydrochloride

**Cat. No.:** HY-B1813A

**CAS No.:** 120447-62-3

**Molecular Formula:** $C_{17}H_{26}ClNO$

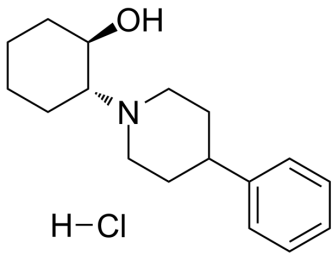
**Molecular Weight:** 295.85

**Target:** Sigma Receptor

**Pathway:** 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 : 20.83 mg/mL (70.41 mM; ultrasonic and warming and heat to 60°C)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 3.3801 mL | 16.9005 mL | 33.8009 mL |
| | 5 mM | 0.6760 mL | 3.3801 mL | 6.7602 mL |
| | 10 mM | 0.3380 mL | 1.6900 mL | 3.3801 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 (7.03 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.03 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.03 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

(±)-Vesamicol hydrochloride ((±)-AH5183 hydrochloride) is a potent vesicular acetylcholine transport inhibitor with a $K_i$ of 2 nM. (±)-Vesamicol hydrochloride also displays high affinity for σ1 and σ2 receptors with $K_i$s of 26 nM and 34 nM, respectively [1][2].

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

Ki: 2 nM (Vesicular acetylcholine transport), 26 nM (σ1 receptors) and 34 nM (σ2 receptors)[1]

**In Vitro**

The pharmacological actions of (±)-Vesamicol have been attributed to inhibition of acetylcholine transport into synaptic vesicles and the subsequent quantal release of acetylcholine[1].

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

**In Vivo**

(±)-Vesamicol (3 mg/kg; intraperitoneal injection; once; male Wistar rats) treatment increases the levels of cytosolic acetylcholine (ACh) in all regions of the brain, while those of vesicular ACh decreased in all regions except for the striatum[2].

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

| | |
|---|---|
| Animal Model: | Male Wistar rats (120-300 g)[2] |
| Dosage: | 3 mg/kg |
| Administration: | Intraperitoneal injection; once |
| Result: | The levels of cytosolic acetylcholine (ACh) increased in all regions of the brain, while those of vesicular ACh decreased in all regions except for the striatum. |

## REFERENCES


[1]. S M Efange, et al. N-hydroxyalkyl derivatives of 3 beta-phenyltropane and 1-methylspiro[1H-indoline-3,4'-piperidine]: vesamicol analogues with affinity for monoamine transporters. J Med Chem. 1997 Nov 21;40(24):3905-14.

[2]. H Kobayashi, et al. Effects of systemic administration of 2-(4-phenyl-piperidino)-cyclohexanol (vesamicol) and an organophosphate DDVP on the cholinergic system in brain regions of rats. Brain Res Bull. 1997;43(1):17-23.





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