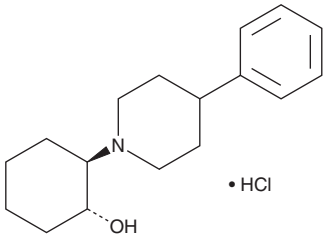
# PRODUCT INFORMATION

## (±)-Vesamicol (hydrochloride)

*Item No. 43150*

**CAS Registry No.:** 120447-62-3
**Formal Name:** (1R,2R)-*rel*-2-(4-phenyl-1-piperidinyl)-cyclohexanol, monohydrochloride
**Synonyms:** (±)-AH5183, *trans*-Vesamicol
**MF:** $C_{17}H_{25}NO \bullet HCl$
**FW:** 295.9
**Purity:** ≥98%
**Supplied as:** A solid
**Storage:** -20°C
**Stability:** ≥4 years




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

(±)-Vesamicol (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the (±)-vesamicol (hydrochloride) in the solvent of choice, which should be purged with an inert gas. (±)-Vesamicol (hydrochloride) is sparingly soluble (1-10 mg/ml) in ethanol and slightly soluble (0.1-1 mg/ml) in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (±)-vesamicol (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. (±)-Vesamicol (hydrochloride) is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

(±)-Vesamicol is an acetylcholine (ACh) uptake inhibitor ($IC_{50}$ = 40 nM) and neuromuscular blocking agent.[1,2] It binds to the vesamicol receptor ($K_i$ = 2 nM), as well as sigma non-opioid intracellular receptor 1 ($\sigma_1$-receptor) and sigma intracellular receptor 2 ($\sigma_2$-receptor; $K_i$s = 26 and 34 nM, respectively).[3] (±)-Vesamicol (150 µg/kg) inhibits electrically induced maximal twitches of tibialis anterior muscles in anesthetized cats.[2] It induces transient flaccid paralysis in conscious mice when administered intravenously or orally ($ED_{50}$s = 2.7 and 35.5 mg/kg, respectively). Intracerebroventricular administration of (±)-vesamicol (80 or 100 µg/animal) decreases rapid eye movement (REM) sleep frequency and duration in rats.[4]

### References


1. Rogers, G.A., Parsons, S.M., Anderson, D.C., *et al.* Synthesis, in vitro acetylcholine-storage-blocking activities, and biological properties of derivatives and analogues of *trans*-2-(4-phenylpiperidino) cyclohexanol (vesamicol). *J. Med. Chem.* **32(6)**, 1217-30 (1989).
2. Brittain, R.T., Levy, G.P., and Tyers, M.B. The neuromuscular blocking action of 2-(4-phenylpiperidino) cyclohexanol (AH 5183). *Eur. J. Pharmacol.* **8(1)**, 93-99 (1969).
3. Efange, S.M., Mach, R.H., Smith, C.R., *et al.* Vesamicol analogues as sigma ligands. Molecular determinants of selectivity at the vesamicol receptor. *Biochem. Pharmacol.* **49(6)**, 791-797 (1995).
4. Salin-Pascual, R.J. and Jimenez-Anguiano, A. Vesamicol, an acetylcholine uptake blocker in presynaptic vesicles, suppresses rapid eye movement (REM) sleep in the rat. *Psychopharmacology (Berl)* **121(4)**, 485-487 (1995).





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