

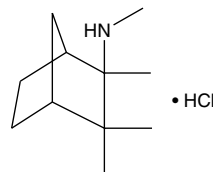
# Product Information



## Mecamylamine (hydrochloride)

Item No. 14602

**CAS Registry No.:** 826-39-1  
**Formal Name:** N,2,3,3-tetramethyl-bicyclo[2.2.1]heptan-2-amine, monohydrochloride  
**Synonym:** Inversine  
**MF:** C<sub>11</sub>H<sub>21</sub>N • HCl  
**FW:** 203.8  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that mecamylamine (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

Mecamylamine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the mecamylamine (hydrochloride) in the solvent of choice. Mecamylamine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of mecamylamine (hydrochloride) in these solvents is approximately 20, 5, and 2 mg/ml, respectively.

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 mecamylamine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of mecamylamine (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Mecamylamine is a noncompetitive nicotinic acetylcholine receptor antagonist with preferential activity at the  $\alpha_3\beta_4$  subtype (IC<sub>50</sub> = 90-640 nM) compared to  $\alpha_4\beta_2$ ,  $\alpha_3\beta_2$ , and  $\alpha_7$  subtypes (IC<sub>50</sub>s range from 1-7  $\mu$ M).<sup>1</sup> Mecamylamine is widely used as a broad-spectrum antagonist of neuronal nicotinic acetylcholine receptors in basic nicotine research. It has been reported to be effective as an aid to smoking cessation and may also be of use in various nicotine-responsive, neuropsychiatric disorders.<sup>1-3</sup>

### References

1. Papke, R.L., Sanberg, P.R., and Shytle, R.D. Analysis of mecamylamine stereoisomers on human nicotinic receptor subtypes. *J. Pharmacol. Exp. Ther.* **297**(2), 646-656 (2001).
2. Damaj, M.I., Flood, P., Ho, K.K., *et al.* Effect of dextrometorphan and dextrorphan on nicotine and neuronal nicotinic receptors: *In vitro* and *in vivo* selectivity. *J. Pharmacol. Exp. Ther.* **312**(2), 780-785 (2005).
3. Mineur, Y.S. and Picciotto, M.R. Nicotine receptors and depression: Revisiting and revising the chlorinergic hypothesis. *Trends Pharmacol. Sci.* **31**(12), 580-586 (2010).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/14602](http://www.caymanchem.com/catalog/14602)

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**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

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