

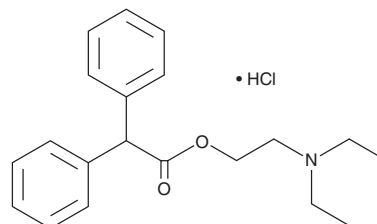
PRODUCT INFORMATION



Adiphenine (hydrochloride)

Item No. 31124

CAS Registry No.: 50-42-0
Formal Name: α -phenyl-benzeneacetic acid, 2-(diethylamino)ethyl ester, monohydrochloride
Synonyms: NSC 129224, Spasmolytin, Trasentin
MF: $C_{20}H_{25}NO_2 \cdot HCl$
FW: 347.9
Purity: $\geq 98\%$
Supplied as: A crystalline solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



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

Laboratory Procedures

Adiphenine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the adiphenine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Adiphenine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of adiphenine (hydrochloride) in these solvents is approximately 30 mg/ml.

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 adiphenine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of adiphenine (hydrochloride) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Adiphenine is an anticholinergic agent.¹⁻⁴ It is an antagonist of nicotinic acetylcholine receptors (nAChRs; IC_{50} s = 1.8, 3.7, and 6.3 μM for the $\alpha 3\beta 4$, $\alpha 4\beta 2$, and $\alpha 4\beta 4$ subunit-containing receptors, respectively), as well as muscarinic acetylcholine receptors (K_i = 0.44 μM).^{1,2} Adiphenine inhibits contractions induced by acetylcholine (ACh) in isolated guinea pig ileum in a concentration-dependent manner.² It prevents tonic hindlimb extension in a mouse model of seizures induced by maximal electroshock (MES) with an ED_{50} value of 62 mg/kg but is neurotoxic at higher doses.³ Adiphenine protects against organophosphate-induced lethality in mice with a 50% protective dose (PD_{50}) value of 3.3 mg/kg.⁴ It has also been used as a local anesthetic.^{1,3}

References

1. Gentry, C.L. and Lukas, R.J. Local anesthetics noncompetitively inhibit function of four distinct nicotinic acetylcholine receptor subtypes. *J. Pharmacol. Exp. Ther.* **299**(3), 1038-1048 (2001).
2. Witkin, J.M., Gordon, R.K., and Chiang, P.K. Comparison of in vitro actions with behavioral effects of antimuscarinic agents. *J. Pharmacol. Exp. Ther.* **242**(3), 796-803 (1987).
3. Tanaka, K. Anticonvulsant properties of procaine, cocaine, adiphenine and related structures. *Proc. Soc. Exp. Biol. Med.* **90**(1), 192-1995 (1955).
4. Jović, R. and Milošević, M. Effective doses of some cholinolytics in the treatment of anticholinesterase poisoning. *Eur. J. Pharmacol.* **12**(1), 85-93 (1970).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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