

PRODUCT INFORMATION



Ambenonium (chloride)

Item No. 40845

CAS Registry No.: 115-79-7

Formal Name: N,N'-[(1,2-dioxo-1,2-ethanediyl)
bis(imino-2,1-ethanediyl)]
bis[2-chloro-N,N-diethyl-
benzenemethanaminium,
dichloride

Synonym: WIN 8,077

MF: $C_{28}H_{42}Cl_2N_4O_2 \cdot 2Cl$

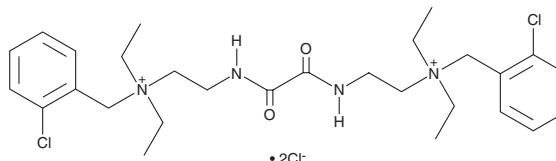
FW: 608.5

Purity: $\geq 95\%$

Supplied as: A 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

Ambenonium (chloride) is supplied as a solid. A stock solution may be made by dissolving the ambenonium (chloride) in the solvent of choice, which should be purged with an inert gas. Ambenonium (chloride) is slightly soluble (0.1-1 mg/ml) in acetonitrile. It is also slightly soluble (0.1-1 mg/ml) in water. We do not recommend storing the aqueous solution for more than one day.

Description

Ambenonium is an inhibitor of acetylcholinesterase (AChE; $IC_{50} = 0.7$ nM).¹ It is selective for AChE over butyrylcholinesterase (BChE; $IC_{50} = 6.82$ μ M). Ambenonium (10 μ M) increases the secretion of amyloid precursor protein (APP) in primary rat basal forebrain cells.² It induces repetitive firing of electrically stimulated gastrocnemius muscle in anesthetized cats when administered intra-arterially at a dose of 5 μ g/animal.³ Ambenonium (3 μ g/animal) inhibits paralysis induced by the neuromuscular blocking agents tubocurarine or decamethonium (Item No. 24907) in anesthetized cats.⁴ Formulations containing ambenonium have previously been used in the treatment of myasthenia gravis.

References

1. Musilek, K., Komloova, M., Holas, O., *et al.* Preparation and *in vitro* screening of symmetrical bis-isoquinolinium cholinesterase inhibitors bearing various connecting linkage - implications for early Myasthenia gravis treatment. *Eur. J. Med. Chem.* **46**(2), 811-818 (2011).
2. Pakaski, M., Rakonczay, Z., and Kasa, P. Reversible and irreversible acetylcholinesterase inhibitors cause changes in neuronal amyloid precursor protein processing and protein kinase C level *in vitro*. *Neurochem. Int.* **38**(3), 219-226 (2001).
3. Blaber, L.C., and Bowman, W.C. The effects of some drugs on the repetitive discharges produced in nerve and muscle by anticholinesterases. *Int. J. Neuropharmacol.* **2**(1-2), 1-16 (1963).
4. Blaber, L.C. The antagonism of muscle relaxants by ambenonium and methoxyambenonium in the cat. *Br. J. Pharmacol. Chemother.* **15**(3), 476-484 (1960).

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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