

Certificate of Analysis

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Product Name: Ambenonium dichloride

Catalog No.: 0388

Batch No.: 1

CAS Number: 115-79-7

IUPAC Name: *N,N*-[(1,2-Dioxo-1,2-ethanediyl)]bis(imino-2,1-ethanediyl)]bis(2-chloro-*N,N*-diethylbenzenemethaminium) dichloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{28}H_{42}Cl_4N_4O_2 \cdot 4H_2O$

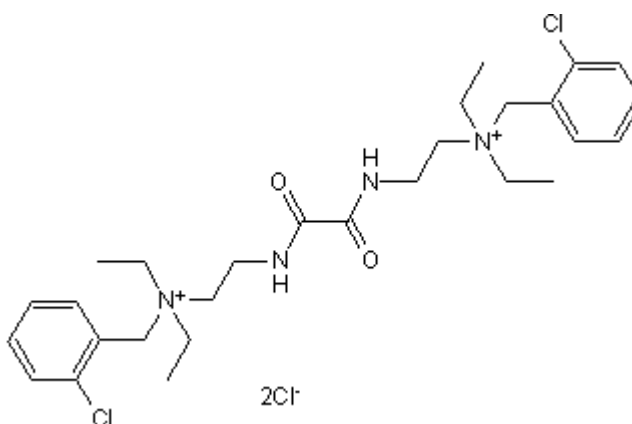
Batch Molecular Weight: 680.54

Physical Appearance: White solid

Solubility: water to 100 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: $R_f = 0.56$ (Dichloromethane:Methanol:Ammonia soln. [9:1:0.1])

Melting Point: At 205°C

1H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

Carbon Hydrogen Nitrogen

Theoretical 49.42 7.41 8.23

Found 49.14 7.22 8.19

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Information

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Description:

Extremely potent, selective and rapidly reversible inhibitor of acetylcholinesterase (AChE) (IC₅₀ values are 0.000698 and 8.20 μM at AChE and BChE respectively).

Physical and Chemical Properties:

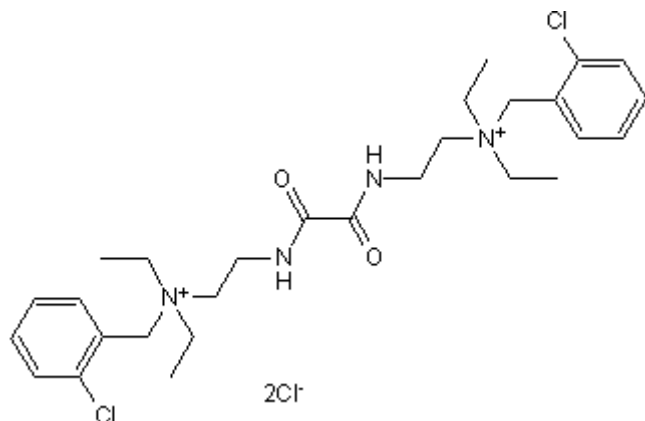
Batch Molecular Formula: C₂₈H₄₂Cl₄N₄O₂·4H₂O

Batch Molecular Weight: 680.54

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Lands et al (1958) An investigation of the structure-activity correlations within a series of ambenonium analogs. *J.Pharmacol.Exp.Ther.* **123** 121. PMID: 13550066.

Web (1965) Affinity for benzoquinonium, and ambenonium derivatives for the acetylcholine receptor, tested on the electroplax, and for acetylcholinesterase in solution. *Biochim.Biophys.Acta.* **102** 172. PMID: 5833399.

Hodge et al (1992) Ambenonium is a rapidly reversible noncovalent inhibitor of acetylcholinesterase, with one of the highest known affinities. *Mol.Pharmacol.* **41** 937. PMID: 1588924.

Bolognesi et al (2003) Design, synthesis and biological evaluation of ambenonium derivatives as AChE inhibitors. *Farmaco* **58** 917. PMID: 13679187.

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