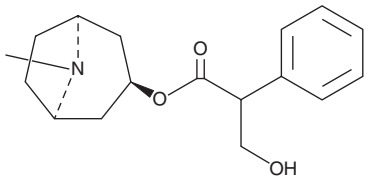
PRODUCT INFORMATION

Atropine

Item No. 12008

CAS Registry No.: 51-55-8
Formal Name: α-(hydroxymethyl)-benzeneacetic acid, (3-*endo*)-8-methyl-8-azabicyclo[3.2.1] oct-3-yl ester
Synonyms: DL-Hyoscyamine, Tropine tropate
MF: $C_{17}H_{23}NO_3$
FW: 289.4
Purity: ≥95%
Supplied as: A crystalline 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

Atropine is supplied as a crystalline solid. A stock solution may be made by dissolving the atropine in the solvent of choice, which should be purged with an inert gas. Atropine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of atropine in these solvents is approximately 16, 10, 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 atropine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of atropine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Atropine is a naturally occurring tropane alkaloid extracted from plants of the family Solanaceae including deadly nightshade (*A. belladonna*). It is a non-selective, competitive antagonist of the muscarinic acetylcholine receptor types M_1, M_2, M_3, M_4, and M_5 (pK_Bs range from 8.9-9.8).[1] Atropine increases firing of the sinoatrial node and conduction through the atrioventricular node of the heart, opposes the actions of the vagus nerve, blocks acetylcholine receptor sites, and decreases bronchial secretions.[2] It is classified as an anticholinergic (parasympatholytic) drug and commonly used to dilate the pupils, increase heart rate, reduce salivation and other secretions, and as an antidote against organophosphate poisoning.[3]

References

1. Caulfield, M.P. and Birdsall, N.J.M. International union of pharmacology. XVII. Classification of muscarinic acetylcholine receptors. *Pharmacol. Rev.* **50(2)**, 279-290 (1998).
2. Broadley, K.J. and Kelly, D.R. Muscarinic receptor agonists and antagonists. *Molecules* **6(3)**, 142-193 (2001).
3. Grynkiewicz, G. and Gadzikowska, M. Tropane alkaloids as medicinally useful natural products and their synthetic derivatives as new drugs. *Pharmacol. Rep.* **60(4)**, 439-463 (2008).

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