3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Atropine

Product Number **A 0132**
Store at Room Temperature

Product Description

Molecular Formula: $C_{17}H_{23}NO_3$
Molecular Weight: 289.4
CAS Number: 51-55-8
pK_a: 9.9 (20 °C)[1]
Melting point: 114-116 °C[2]

Atropine is a cholinergic receptor antagonist isolated from *Atropa belladona L.*, *Datura stramonium L.,* and other plants of the *Solanaceae family*.[2] Atropine is a competitive nonselective antagonist at central and perpheral muscarinic acetylcholine receptors.[3,4,5,6] Excitatory junction potentials (e.j. ps.) can be blocked by atropine sulfate or tetrodotoxin, using either at micromolar concentrations. Inhibitory junction potentials are also blocked by tetrodotoxin, but were unaffected by atropine (still at micromolar levels).[7] A comprehensive description and review of atropine has been reported.[8]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

Atropine is soluble in ethanol (500 mg/ml), glycerol (35 mg/ml), or water (2 mg/ml), [2] Atropine is soluble in dilute acid.[2]

Storage/Stability

Solutions may be stored for several days at 4 °C.

References

1. Clarke's Isolation and Identification of Drugs, 2nd ed., Moffat, A. C., et al., eds., The Pharmaceutical Press (London, GB: 1986), p. 363-364.
2. The Merck Index, 12th Ed., Entry# 907.
3. Kaiser, C., and Rzeszotarski, W.J., Cholinergic agents. Neurotransmissions III, No. 2 RBI/Sigma (1986).
4. Trovero, F., et al., Pharmacological profile of CEB-1957 and atropine toward brain muscarinic receptors and comparative study of their efficacy against sarin poisoning. Toxicol. Appl. Pharmacol.,**150**, 321-327 (1998).
5. Zwart, R., and Vijverberg, H.P., Potentiation and inhibition of neuronal nicotinic receptors by atropine: competitive and noncompetitive effects. Mol. Pharmacol., **52**, 886-895 (1997).
6. Walch, L., et al., Evidence for a M(1) muscarinic receptor on the endothelium of human pulmonary veins. Br. J. Pharmacol., **130**, 73-78 (2000).
7. Goodman and Gilman's The Pharmacological Basis of Therapeutics, 8th ed., Gilman, A. G., et al., eds., McGraw-Hill (New York, NY: 1990), p. 150.
8. Al-Badr, A. A. and Muhtadi, F. J., Analytical Profiles of Drug Substances, Vol. 14, 325-389 K. Florey, ed., Academic Press (New York, NY: 1985).

MES/NSB 11/02