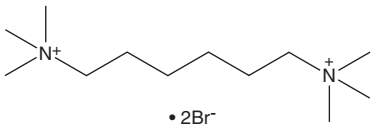
PRODUCT INFORMATION

Hexamethonium (bromide)

Item No. 25505

CAS Registry No.: 55-97-0
Formal Name: N^1,N^1,N^1,N^6,N^6,N^6-hexamethyl-1,6-hexanediaminium, dibromide
MF: $C_{12}H_{30}N_2 \bullet 2Br$
FW: 362.2
Purity: ≥98%
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

Hexamethonium (bromide) is supplied as a crystalline solid. A stock solution may be made by dissolving the hexamethonium (bromide) in the solvent of choice, which should be purged with an inert gas. Hexamethonium (bromide) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of hexamethonium (bromide) in these solvents is approximately 33, 16, 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 hexamethonium (bromide) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of hexamethonium (bromide) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Hexamethonium is a peripherally-acting nondepolarizing neuromuscular blocking agent that acts as an antagonist of nicotinic acetylcholine receptors (nAChRs).[1,2] It decreases acetylcholine release induced by carbamoylcholine (Item No. 14486) in isolated cat superior cervical ganglion when used at concentrations of 27.4 and 54.8 µg/ml.[3] It also decreases mean arterial pressure in unanesthetized rats when administered at a dose of 40 mg/kg.[4] Intraventricular administration of hexamethonium (18 ng, i.c.v.) induces signs of nicotine abstinence, including shaking, writhing, and chewing in nicotine-dependent rats.[5] Formulations containing hexamethonium were previously used in the treatment of hypertension.

References

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2. Papke, R.L., Wecker, L., and Stitzel, J.A. Activation and inhibition of mouse muscle and neuronal nicotinic acetylcholine receptors expressed in *Xenopus oocytes*. *J. Pharmacol. Exp. Ther.* **333(2)**, 501-518 (2010).
3. McKinstry, D.N. and Koelle, G.B. Effects of drugs on acetylcholine release from the cat superior cervical ganglion by carbachol and by preganglionic stimulation. *J. Pharmacol. Exp. Ther.* **157(2)**, 328-336 (1967).
4. Nishida, Y., Tandai-Hiruma, M., Kemuriyama, T., *et al.* Long-term blood pressure control: Is there a set-point in the brain? *J. Physiol. Sci.* **62(3)**, 147-161 (2012).
5. Malin, D.H., Lake, J.R., Schopen, C.K., *et al.* Nicotine abstinence syndrome precipitated by central but not peripheral hexamethonium. *Pharmacol. Biochem. Behav.* **58(3)**, 695-699 (1997).

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