



Product Information

Pilocarpine hydrochloride

Product Number **P 6503**
Store at Room Temperature

Replacement for Product Number 14,188-7

Product Description

Molecular Formula: $C_{11}H_{16}N_2O_2 \cdot HCl$

Molecular Weight: 244.7

CAS Number: 54-71-7

Melting Point: 204-205 °C¹

Synonym: (3S-cis)-3-ethylidihydro-4-[(1-methyl-1H-imidazol-5-yl)methyl]-2(3H)-furanone hydrochloride

The tertiary amine compound pilocarpine is used in neuroscience and ophthalmology research. It is a parasympathomimetic agent with activity similar to that of acetylcholine.² The effect of pH on the permeation of pilocarpine and related compounds across isolated albino rabbit cornea has been studied.³

Rat hippocampal slice cultures have been treated with pilocarpine to probe seizure-like activity and alterations in neurotrophin and neuropeptide expression.⁴ The neuroprotective activity of imidazoline compounds in pilocarpine-treated rats with limbic status epilepticus has been investigated.⁵ Changes in mitochondrial function in hippocampus from pilocarpine-treated epileptic rats have been studied.⁶

Solidified reverse micellar solutions (SRMS), based on lecithin and solid lipids, and SRMS-based nanosuspensions have been developed as potential carriers of pilocarpine.⁷ Poly(lactide-co-glycolide) nanoparticles that contain pilocarpine hydrochloride have been formulated, with polyvinylalcohol, carbomer, or poloxamer as stabilizers during emulsification.⁸

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (100 mg/ml) with heat as needed, yielding a clear, colorless solution. A 0.5% solution in CO₂-free water has a pH of 3.5 - 4.5. This product is also soluble in alcohol and slightly soluble in chloroform.²

References

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3. Suhonen, P., et al., Different effects of pH on the permeation of pilocarpine and pilocarpine prodrugs across the isolated rabbit cornea. *Eur. J. Pharm. Sci.*, **6(3)**, 169-176 (1998).
4. Poulsen, F. R., et al., Pilocarpine-induced seizure-like activity with increased BDNF and neuropeptide Y expression in organotypic hippocampal slice cultures. *Brain Res.*, **950(1-2)**, 103-118 (2002).
5. Milhaud, D., et al., Neuroprotective activity of antazoline against neuronal damage induced by limbic status epilepticus. *Neuroscience*, **120(2)**, 475-484 (2003).
6. Kudin, A. P., et al., Seizure-dependent modulation of mitochondrial oxidative phosphorylation in rat hippocampus. *Eur. J. Neurosci.*, **15(7)**, 1105-1114 (2002).

7. Friedrich, I., and Muller-Goymann, C. C., Characterization of solidified reverse micellar solutions (SRMS) and production development of SRMS-based nanosuspensions. Eur. J. Pharm. Biopharm., **56(1)**, 111-119 (2003).
8. Yoncheva, K., et al., Influence of process parameters of high-pressure emulsification method on the properties of pilocarpine-loaded nanoparticles. J. Microencapsul., **20(4)**, 449-458 (2003).

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