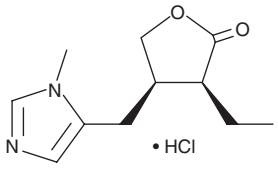
PRODUCT INFORMATION

(+)-Pilocarpine (hydrochloride)

Item No. 14487

CAS Registry No.: 54-71-7
Formal Name: (3S,4R)-3-ethyldihydro-4-[(1-methyl-1H-imidazol-5-yl)methyl]-2(3H)-furanone, monohydrochloride
Synonym: NSC 5746
MF: $C_{11}H_{16}N_2O_2 \bullet HCl$
FW: 244.7
Purity: ≥98%
UV/Vis.: λ_{max}: 215 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(+)-Pilocarpine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (+)-pilocarpine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. (+)-Pilocarpine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (+)-pilocarpine (hydrochloride) in ethanol and DMF is approximately 2 mg/ml and approximately 3.3 mg/ml in DMSO.

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 (+)-pilocarpine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (+)-pilocarpine (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(+)-Pilocarpine is a muscarinic acetylcholine receptor agonist that binds to human hippocampal, pons, and submandibular gland membranes, which are endogenously enriched in the M_1, M_2, and M_3 receptor subtypes, respectively (K_{iapp}s = 6, 8.2, and 6.9 µM, respectively).[1] It induces salivary secretion in rats when administered intraperitoneally at a dose of 1 mg/kg.[2] Topical administration of (+)-pilocarpine inhibits methylcellulose-induced increases in intraocular pressure in rabbits in a dose-dependent manner.[3] (+)-Pilocarpine is a chemoconvulsant that has been used in the generation of temporal lobe epilepsy animal models.[4-6] Formulations containing (+)-pilocarpine have been used in the treatment of elevated intraocular pressure and dry mouth.

References

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4. Kokate, T.G., Cohen, A.L., Karp, E., *et al. Neuropharmacology* **35(8)**, 1049-1056 (1996).
5. Ma, L., Wang, L., Yang, F., *et al. CNS Neurosci. Ther.* (2014).
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