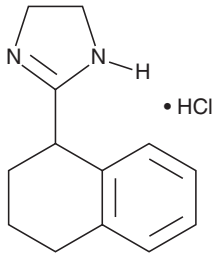
PRODUCT INFORMATION

Tetrahydrozoline (hydrochloride)

Item No. 23004

CAS Registry No.: 522-48-5
Formal Name: 4,5-dihydro-2-(1,2,3,4-tetrahydro-1-naphthalenyl)-1H-imidazole, monohydrochloride
Synonym: Tetryzoline
MF: $C_{13}H_{16}N_2 \bullet HCl$
FW: 236.7
Purity: ≥98%
Supplied as: A crystalline solid
Storage: 4°C
Stability: ≥4 years



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

Laboratory Procedures

Tetrahydrozoline (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the tetrahydrozoline (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Tetrahydrozoline (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of tetrahydrozoline (hydrochloride) in ethanol and DMSO is approximately 25 mg/ml and approximately 20 mg/ml in DMF.

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 tetrahydrozoline (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tetrahydrozoline (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

Tetrahydrozoline is an α_1-adrenergic receptor (α_1-AR) agonist.[1] Topical application to the eyes or nasal mucosa activates α_1-ARs and induces vasoconstriction in rats, while oral administration activates central α_2-ARs resulting in respiratory depression and hypotension in rats and rabbits.[1-3] Formulations containing tetrahydrozoline have been used to treat eye irritation and nasal congestion.[1]

References

1. Lev, R., and Clark, R.F. Visine overdose: Case report of an adult with hemodynamic compromise. *J. Emerg. Med.* **13(5)**, 649-652 (1995).
2. Kobinger, W., and Pichler, L. Centrally induced reduction in sympathetic tone - a postsynaptic α-adrenoceptor-stimulating action of imidazolines. *Eur. J. Pharmacol.* **40(2)**, 311-320 (1976).
3. Ruffolo, R.R., Jr., and Waddell, J.E. Receptor interactions of imidazolines: α-Adrenoceptors of rat and rabbit aortae differentiated by relative potencies, affinities and efficacies of imidazoline agonists. *Br. J. Pharmacol.* **77(1)**, 169-176 (1982).

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