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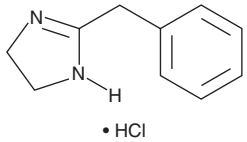
PRODUCT INFORMATION

Tolazoline (hydrochloride)

Item No. 18865

CAS Registry No.: 59-97-2
Formal Name: 4,5-dihydro-2-(phenylmethyl)-1H-imidazole, monohydrochloride
MF: $C_{10}H_{12}N_2 \bullet HCl$
FW: 196.7
Purity: ≥95%
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

Tolazoline (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the tolazoline (hydrochloride) in the solvent of choice. Tolazoline (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of tolazoline (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 tolazoline (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tolazoline (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

Tolazoline is an α_1-adrenergic receptor (α_1-AR; IC_{50} = 3,200 nM) and α_2-AR antagonist (K_is = 112, 1,230, 354, and 173 nM for α_{2A}, α_{2B}-, α_{2C}-, and α_{2D}-ARs, respectively).[1,2] Tolazoline inhibits α-AR agonist-induced contractions in isolated human corpus cavernosum smooth muscle (IC_{50} = 0.1 µM).[3] It also lowers vascular resistance in isolated perfused porcine skin flaps (IPPSFs) preconstricted by norepinephrine with an EC_{50} value of 288 nM.[4] Formulations containing tolazoline have been used in veterinary medicine to reverse the analgesia and sedation induced by xylazine in horses.

References

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2. Schwartz, D.D. and Clark, T.P. Selectivity of atipamezole, yohimbine and tolazoline for alpha-2 adrenergic receptor subtypes: Implications for clinical reversal of alpha-2 adrenergic receptor mediated sedation in sheep. *J. Vet. Pharmacol. Ther.* **21(5)**, 342-347 (1998).
3. Costa, P., Soulie-Vassal, M.L., Sarrazin, B., *et al*. Adrenergic receptors on smooth muscle cells isolated from human penile corpus cavernosum. *J. Urol.* **150(3)**, 859-863 (1993).
4. Rogers, R.A. and Riviere, J.E. Pharmacologic modulation of the cutaneous vasculature in the isolated perfused porcine skin flap. *J. Pharm. Sci.* **83(12)**, 1682-1689 (1994).

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