

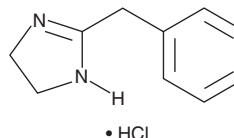
# PRODUCT INFORMATION



## Tolazoline (hydrochloride)

Item No. 18865

**CAS Registry No.:** 59-97-2  
**Formal Name:** 4,5-dihydro-2-(phenylmethyl)-1H-imidazole, monohydrochloride  
**MF:**  $C_{10}H_{12}N_2 \cdot HCl$   
**FW:** 196.7  
**Purity:**  $\geq 95\%$   
**Supplied as:** A crystalline solid  
**Storage:**  $-20^{\circ}C$   
**Stability:**  $\geq 4$  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  $\alpha_1$ -adrenergic receptor ( $\alpha_1$ -AR;  $IC_{50} = 3,200$  nM) and  $\alpha_2$ -AR antagonist ( $K_i$ s = 112, 1,230, 354, and 173 nM for  $\alpha_{2A}$ ,  $\alpha_{2B}$ ,  $\alpha_{2C}$ , and  $\alpha_{2D}$ -ARs, respectively).<sup>1,2</sup> Tolazoline inhibits  $\alpha$ -AR agonist-induced contractions in isolated human corpus cavernosum smooth muscle ( $IC_{50} = 0.1$   $\mu M$ ).<sup>3</sup> It also lowers vascular resistance in isolated perfused porcine skin flaps (IPPSFs) precontracted by norepinephrine with an  $EC_{50}$  value of 288 nM.<sup>4</sup> Formulations containing tolazoline have been used in veterinary medicine to reverse the analgesia and sedation induced by xylazine in horses.

### References

1. Megens, A.A.H.P., Leysen, J.E., Awouters, F.H.L., *et al.* Further validation of in vivo and in vitro pharmacological procedures for assessing the  $\alpha_2/\alpha_1$ -selectivity of test compounds: (1)  $\alpha$ -adrenoceptor antagonists. *Eur. J. Pharmacol.* **129**(1-2), 49-55 (1986).
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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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