

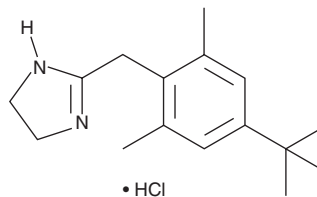
# PRODUCT INFORMATION



## Xylometazoline (hydrochloride)

Item No. 27797

**CAS Registry No.:** 1218-35-5  
**Formal Name:** 2-[[4-(1,1-dimethylethyl)-2,6-dimethylphenyl]methyl]-4,5-dihydro-1H-imidazole, monohydrochloride  
**MF:**  $C_{16}H_{24}N_2 \cdot HCl$   
**FW:** 280.8  
**Purity:**  $\geq 98\%$   
**Supplied as:** A 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

Xylometazoline (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the xylometazoline (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Xylometazoline (hydrochloride) is soluble in the organic solvent ethanol at a concentration of approximately 5 mg/ml.

Xylometazoline (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, xylometazoline (hydrochloride) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Xylometazoline (hydrochloride) has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Xylometazoline is an  $\alpha$ -adrenergic receptor ( $\alpha$ -AR) agonist that binds to  $\alpha_{1A}$ ,  $\alpha_{1B}$ ,  $\alpha_{1D}$ ,  $\alpha_{2A}$ ,  $\alpha_{2B}$ , and  $\alpha_{2C}$ -ARs in a radioligand binding assay ( $IC_{50}$ s = 0.08, 0.56, 0.45, 0.98, 1.8, and 0.22  $\mu M$ , respectively).<sup>1</sup> It increases intracellular calcium levels in HEK293 cells transfected with human  $\alpha_{2B}$ -ARs ( $EC_{50}$  = 99  $\mu M$ ) but not other  $\alpha$ -ARs. Xylometazoline is also an agonist of the serotonin (5-HT) receptor subtype 5-HT<sub>1</sub> ( $K_i$ s = 0.7 and 14 nM for the human 5-HT<sub>1D</sub> and 5-HT<sub>1B</sub> receptors, respectively).<sup>2</sup> It inhibits forskolin-induced cAMP production in CHO Pro 5 cells expressing human 5-HT<sub>1D</sub> and 5-HT<sub>1B</sub> receptors by 62 and 49%, respectively, when used at a concentration of 1  $\mu M$ . Xylometazoline (0.25  $\mu g/ml$ ) induces contraction of isolated dog nasal mucosal blood vessels and reduces nasal patency in dogs when administered topically or intravenously.<sup>3</sup>

### References

1. Haenisch, B., Waltstab, J., Herberhold, S., et al. Alpha-adrenoceptor agonistic activity of oxymetazoline and xylometazoline. *Fundam. Clin. Pharmacol.* **24**(6), 729-739 (2010).
2. Law, H., Dukat, M., Teitler, M., et al. Benzyloimidazolines as h5-HT<sub>1B/1D</sub> serotonin receptor ligands: A structure-affinity investigation. *J. Med. Chem.* **41**(13), 2243-2251 (1998).
3. Jackson, R.T. and Birnbaum, J.E. A comparison of a synthetic prostaglandin and xylometazoline hydrochloride as nasal decongestants. *Otolaryngol. Head Neck Surg.* **90**(5), 595-597 (1982).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM