

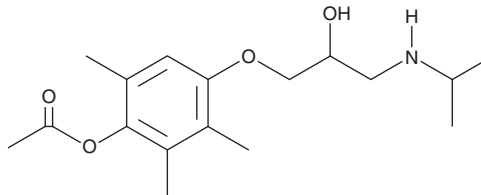
# PRODUCT INFORMATION



## Metipranolol

Item No. 34089

**CAS Registry No.:** 22664-55-7  
**Formal Name:** 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-2,3,6-trimethylphenol, 1-acetate  
**MF:** C<sub>17</sub>H<sub>27</sub>NO<sub>4</sub>  
**FW:** 309.4  
**Purity:** ≥98%  
**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

Metipranolol is supplied as a crystalline solid. A stock solution may be made by dissolving the metipranolol in the solvent of choice, which should be purged with an inert gas. Metipranolol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of metipranolol in these solvents is approximately 10, 20, and 30 mg/ml, respectively.

Metipranolol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, metipranolol should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Metipranolol has a solubility of approximately 0.14 mg/ml in a 1:6 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Metipranolol is a  $\beta$ -adrenergic receptor ( $\beta$ -AR) antagonist.<sup>1</sup> It binds to primary rabbit iris and ciliary body homogenates ( $K_i = 34$  nM) and inhibits relaxation induced by isoproterenol (Item No. 15592) in guinea pig atrium and by fenoterol (Item No. 21293) in rat uterus ( $pA_{2.5} = 8.3$  and 8.4, respectively). *In vitro*, metipranolol (100  $\mu$ M) inhibits anoxia-induced cell death in primary rat retinal cells and sodium nitroprusside-induced lipid peroxidation in rat primary retinal homogenates.<sup>2,3</sup> *In vivo*, topical ocular application of metipranolol (0.3%) decreases  $\alpha$ -chymotrypsin-induced increases in intraocular pressure (IOP) in rabbits.<sup>1</sup> It also inhibits the blinking response to ocular tactile stimulation in rabbits when administered topically to the eye at a dose of 0.6%. Formulations containing metipranolol have been used in the treatment of elevated IOP in patients with ocular hypertension or glaucoma.

### References

1. Sugrue, M.F., Armstrong, J.M., Gautheron, P.D., *et al.* A study on the ocular and extraocular pharmacology of metipranolol. *Graefes. Arch. Clin. Exp. Ophthalmol.* **222(3)**, 123-127 (1985).
2. Wood, J.P.M., Schmidt, K.-G., Melena, J., *et al.* The  $\beta$ -adrenoceptor antagonists metipranolol and timolol are retinal neuroprotectants: Comparison with betaxolol. *Exp. Eye Res.* **76(4)**, 505-516 (2003).
3. Osborne, N.N. and Wood, J.P.M. Metipranolol blunts nitric oxide-induced lipid peroxidation and death of retinal photoreceptors: A comparison with other anti-glaucoma drugs. *Invest. Ophthalmol. Vis. Sci.* **45(10)**, 3787-3795 (2004).

#### 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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