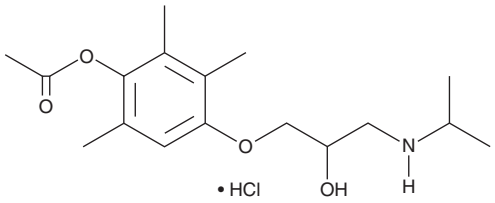
# PRODUCT INFORMATION

## Metipranolol (hydrochloride)

*Item No. 24003*

**CAS Registry No.:** 36592-77-5
**Formal Name:** 4-[2-hydroxy-3-[(1-methylethyl)amino] propoxy]-2,3,6-trimethyl-phenol, 1-acetate, monohydrochloride
**Synonym:** Trimepranol
**MF:** $C_{17}H_{27}NO_4 \bullet HCl$
**FW:** 345.9
**Purity:** ≥98%
**UV/Vis.:** $\lambda_{max}$: 203 nm
**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 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the metipranolol (hydrochloride) in the solvent of choice. Metipranolol (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 metipranolol (hydrochloride) in ethanol is approximately 10 mg/ml and approximately 50 mg/ml in DMSO and 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 metipranolol (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metipranolol (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Metipranolol is a β-adrenergic receptor (β-AR) antagonist.[1] 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 ($pA_2$s = 8.3 and 8.4, respectively). *In vitro*, metipranolol (100 µM) inhibits anoxia-induced cell death in primary rat retinal cells and sodium nitroprusside-induced lipid peroxidation in rat primary retinal homogenates.[2,3] *In vivo*, topical ocular application of metipranolol (0.3%) decreases α-chymotrypsin-induced increases in intraocular pressure (IOP) in rabbits.[1] 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 β-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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