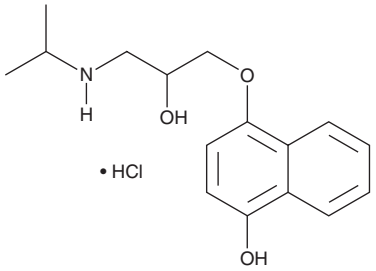
# PRODUCT INFORMATION

## (±)-4-hydroxy Propranolol (hydrochloride)

*Item No. 18630*

**CAS Registry No.:** 14133-90-5
**Formal Name:** 4-[2-hydroxy-3-[(1-methylethyl) amino]propoxy]-1-naphthalenol, monohydrochloride
**MF:** $C_{16}H_{21}NO_3 \bullet HCl$
**FW:** 311.8
**Purity:** ≥95%
**Stability:** ≥2 years at -20°C
**Supplied as:** A crystalline solid
**UV/Vis.:** $\lambda_{max}$: 208, 243, 319 nm




### Laboratory Procedures

For long term storage, we suggest that (±)-4-hydroxy propranolol (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

(±)-4-hydroxy Propranolol (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-4-hydroxy propranolol (hydrochloride) in the solvent of choice. (±)-4-hydroxy Propranolol (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 (±)-4-hydroxy propranolol (hydrochloride) in DMSO and ethanol is approximately 30 mg/ml and approximately 50 mg/ml in DMF.

(±)-4-hydroxy Propranolol (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (±)-4-hydroxy propranolol (hydrochloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (±)-4-hydroxy Propranolol (hydrochloride) has a solubility of approximately 0.05 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Propranolol inhibits $\beta_1$-, $\beta_2$-, and $\beta_3$-adrenergic receptors with log $K_D$ values of -8.16, -9.08, and -6.93, respectively.[1,2] (±)-4-hydroxy Propranolol is an active metabolite of propranolol, inhibiting $\beta_1$- and $\beta_2$-adrenergic receptors with $K_D$ values of 2.4 and 5.8 nM, respectively.[3,4] It is comparable to propranolol in potency in antagonizing the effects of isoprenaline on heart rate and blood pressure in cats and dogs.[3,5] (±)-4-hydroxy propranolol also has antioxidant properties at micromolar concentrations.[6]

### References


1. Baker, J.G. *Br. J. Pharmacol.* **144(3)**, 317-322 (2005).
2. Mehvar, R. and Brocks, D.R. S *J. Pharm. Pharm. Sci.* **4(2)**, 185-200 (2001).
3. Fitzgerald, J.D. and O'Donnell, S.R. *Br. J. Pharmacol.* **43(1)**, 222-235 (1971).
4. Nelson, W.L., Bartels, M.J., Bednarski, P.J., *et al. J. Med. Chem.* **27(7)**, 857-861 (1984).
5. Fitzgerald, J.D. and O'Donnell, S.R. *Br. J. Pharmacol.* **45(2)**, 207-217 (1972).
6. Mak, I.T. and Weglicki, W.B. *J. Pharmacol. Exp. Ther.* **308(1)**, 85-90 (2004).





**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