**Data Sheet**

**Product Name:** Propranolol (hydrochloride)

**Cat. No.:** HY-B0573

**CAS No.:** 318-98-9

**Molecular Formula:** C_{16}H_{22}ClNO_{2}

**Molecular Weight:** 295.80

**Target:** Adrenergic Receptor; Autophagy

**Pathway:** Autophagy; GPCR/G Protein

**Solubility:** DMSO: ≥150 mg/mL

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**BIOLOGICAL ACTIVITY:**

Propranolol hydrochloride is a nonselective β-adrenergic receptor (βAR) antagonist with an IC_{50} of 12 nM.

IC_{50} & Target: IC_{50}: 12 nM (βAR)[1]

**In Vitro:** In cultured endothelial or tumor cells, propranolol has been shown to both reduce cAMP levels and simultaneously activate the mitogen-activated protein kinase (MAPK) pathway downstream of βAR inhibition[2]. It displays high affinity for 5-HT_{1B} receptors (K_{i} = 17 nM), and milder affinity for 5HT_{1D} receptors (K_{i} = 10.2 μM)[3].

**In Vivo:** Chronic administration of propranolol increased the beta(1)-adrenoceptors but decreased the beta(2)-adrenoceptors without changing total amount of plasma membrane beta-adrenoceptors[4].

**PROTOCOL (Extracted from published papers and Only for reference)**

**Animal Administration:**[4] Male Wistar rats weighing 250–300 g are used in the study. Propranolol is dissolved with tap water, and given ad lib. The daily consumption of propranolol is estimated to be 40 mg/kg based on a mean intake of 35 mL/day of water for a 250 g rat. The treatment period of β-adrenoceptor antagonists is changed from 1 to 3 or 6 weeks and the effects are examined[4].

**References:**


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**Caution: Product has not been fully validated for medical applications. For research use only.**

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