# Acebutolol hydrochloride

**Cat. No.:** HY-17497A

**CAS No.:** 34381-68-5

**Molecular Formula:** $C_{18}H_{29}ClN_2O_4$

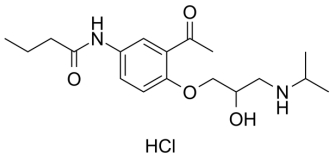
**Molecular Weight:** 372.89

**Target:** Adrenergic Receptor

**Pathway:** GPCR/G Protein; Neuronal Signaling

**Storage:** 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (268.18 mM; Need ultrasonic)

$H_2O$ : ≥ 50 mg/mL (134.09 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.6818 mL | 13.4088 mL | 26.8176 mL |
| 5 mM | 0.5364 mL | 2.6818 mL | 5.3635 mL |
| 10 mM | 0.2682 mL | 1.3409 mL | 2.6818 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 120 mg/mL (321.81 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.70 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.70 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.70 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Acebutolol hydrochloride is an orally active β1 adrenergic receptor (β1AR) antagonist. Acebutolol hydrochloride is used in the treatment of hypertension, angina pectoris and cardiac arrhythmias[1][2][3].

**$IC_{50}$ & Target**

β1 adrenoceptor

| | |
|---|---|
| **In Vivo** | Acebutolol is a beta blocker for the treatment of hypertension and arrhythmias. Acebutolol following single intravenous administration (10 mg/kg) to rat results in the plasma clearance of 61.9 mL/min/kg, the volume of distribution of 9.6 L/kg, and an elimination half-life of 1.8 hours. Acebutolol following single intravenous administration (50 mg/kg) to rat results in the plasma clearance of 46.5 mL/min/kg, the volume of distribution of 9.5 L/kg, and an elimination half-life of 2.3 hours[1]. Acebutolol (30 mg/kg) decreases cardiac output by 65% and 31% after 1 min and 10 min measurements, respectively, in Sprague-Dawley rats. Acebutolol (30 mg/kg) significantly reduces regional blood flow (RBF) in most organs either after 1 min or 10 min measurements when compare with the baseline values in Sprague-Dawley rats[3].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Protein Cell. 2019 Mar;10(3):178-195.
- J Pharmaceut Biomed. 2020, 113870.
- Department of Analytical Chemistry. Charles University. 2019 Jun.

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## REFERENCES

[1]. Piquette-Miller, M. and F. Jamali, Pharmacokinetics and multiple peaking of acebutolol enantiomers in rats. Biopharm Drug Dispos, 1997. 18(6): p. 543-56.

[2]. Mostafavi, S., R. Lewanczuk, and R. Foster, Influence of acebutolol and metoprolol on cardiac output and regional blood flow in rats. Biopharm Drug Dispos, 2000. 21(4): p. 121-8.

[3]. Bristow MR, et al. Treatment of chronic heart failure with β-adrenergic receptor antagonists: a convergence of receptor pharmacology and clinical cardiology. Circ Res. 2011 Oct 28;109(10):1176-94.



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