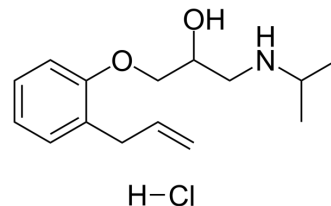


## Alprenolol hydrochloride

<b>Cat. No.:</b>	HY-B1517A
<b>CAS No.:</b>	13707-88-5
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>24</sub> ClNO <sub>2</sub>
<b>Molecular Weight:</b>	285.81
<b>Target:</b>	5-HT Receptor
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (349.88 mM; Need ultrasonic)																					
	H <sub>2</sub> O : 50 mg/mL (174.94 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.4988 mL</td> <td>17.4941 mL</td> <td>34.9883 mL</td> </tr> <tr> <td>5 mM</td> <td>0.6998 mL</td> <td>3.4988 mL</td> <td>6.9977 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3499 mL</td> <td>1.7494 mL</td> <td>3.4988 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	3.4988 mL	17.4941 mL	34.9883 mL	5 mM	0.6998 mL	3.4988 mL	6.9977 mL	10 mM	0.3499 mL	1.7494 mL	3.4988 mL
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	Please refer to the solubility information to select the appropriate solvent.																					
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 11 mg/mL (38.49 mM); Clear solution; Need ultrasonic																					
	2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: 2.08 mg/mL (7.28 mM); Suspended solution; Need ultrasonic																					
	3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (7.28 mM); Clear solution																					
	4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (7.28 mM); Clear solution																					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Alprenolol ((RS)-Alprenolol; dl-Alprenolol) hydrochloride is an orally active non-selective β-adrenoceptor antagonist and an antagonist of 5-HT <sub>1A</sub> and 5-HT <sub>1B</sub> receptors. Alprenolol hydrochloride is used as an anti-hypertensive, anti-anginal and anti-arrhythmic agent <sup>[1][2][3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	5-HT <sub>1A</sub> Receptor

## In Vivo

Alprenolol (p.o., 50 mg/kg) hydrochloride causes a significant drop in blood pressure which averages 20 mm Hg (at 3-hr) and an increase in heart rate by 39 beats/min (at 3-hr) in conscious renal hypertensive dogs<sup>[1]</sup>.

Alprenolol (i.p., 5 mg/kg) hydrochloride effectively blocks the anxiolytic effects of indorenate and ipsapirone but do not reduce the motor activity in adult male Swiss Webster mice<sup>[2]</sup>.

Alprenolol (intravenous injection, 0.5 or 1.0 mg/kg) can decrease systolic pressure by a mean of 10 mm Hg, diastolic pressure by a mean of 10 mm Hg hydrochloride and heart rate by 23 beats/min, as well as slightly reduce both myocardial and liver blood flows by mean of 17% and 15% respectively at a dose of 1.0 mg/kg in cats<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Commun. 2020 Sep 25;11(1):4857.
- Nat Chem Biol. 2023 Aug 14.
- J Pharmaceut Biomed. 2020, 113870.
- J Chromatogr B. 2023 Jun 20, 123804.
- bioRxiv. 2020 Jan.

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## REFERENCES

[1]. Himori N, et al. Effects of beta-adrenoceptor blocking agents, pindolol, alprenolol and practolol on blood pressure and heart rate in conscious renal hypertensive dogs. Arch Int Pharmacodyn Ther. 1977 Jan;225(1):152-65.

[2]. Fernández-Guasti A, et al. Evidence for the involvement of the 5-HT<sub>1A</sub> receptor in the anxiolytic action of indorenate and ipsapirone. Psychopharmacology (Berl). 1990;101(3):354-8.

[3]. Parratt JR, et al. Myocardial and haemodynamic effects of the beta-adrenoceptor blocking drug alprenolol (H56/28) in anaesthetized cats. Br J Pharmacol. 1969 Oct;37(2):357-66.

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

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