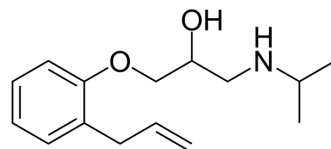


Alprenolol

| | |
|--------------------|--|
| Cat. No.: | HY-B1517 |
| CAS No.: | 13655-52-2 |
| Molecular Formula: | C ₁₅ H ₂₃ NO ₂ |
| Molecular Weight: | 249.35 |
| Target: | 5-HT Receptor |
| Pathway: | GPCR/G Protein; Neuronal Signaling |
| Storage: | Powder -20°C 3 years 4°C 2 years |



* The compound is unstable in solutions, freshly prepared is recommended.

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (401.04 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (insoluble)

| Concentration | Solvent | Mass | | |
|---------------------------|---------|-----------|------------|------------|
| | | 1 mg | 5 mg | 10 mg |
| Preparing Stock Solutions | 1 mM | 4.0104 mL | 20.0521 mL | 40.1043 mL |
| | 5 mM | 0.8021 mL | 4.0104 mL | 8.0209 mL |
| | 10 mM | 0.4010 mL | 2.0052 mL | 4.0104 mL |

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 4 mg/mL (16.04 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (10.03 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (10.03 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (10.03 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Alprenolol ((RS)-Alprenolol; dl-Alprenolol) is an orally active non-selective β-adrenoceptor antagonist and an antagonist of 5-HT_{1A} and 5-HT_{1B} receptors. Alprenolol is used as an anti-hypertensive, anti-anginal and anti-arrhythmic agent^{[1][2][3]}.

IC₅₀ & Target

5-HT_{1A} Receptor

In Vivo

Alprenolol (p.o., 50 mg/kg) 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^[1].

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

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 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^[3].

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.
- Sci Total Environ. 2024 May 13;933:173244.
- Cell Rep Methods. 2023 Oct 23;3(10):100599.
- J Pharmaceut Biomed. 2020, 113870.

See more customer validations on www.MedChemExpress.com

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_{1A} 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.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA