Terbutaline sulfate

Cat. No.: HY-B0802

CAS No.: 23031-32-5

Molecular Formula: $C_{12}H_{20}NO_5S_{0.5}$

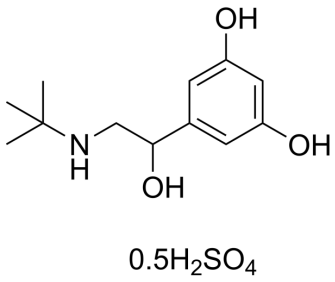
Molecular Weight: 274.32

Target: Adrenergic Receptor; Antibiotic

Pathway: GPCR/G Protein; Neuronal Signaling; Anti-infection

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

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



$0.5H_2SO_4$

SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (182.27 mM; Need ultrasonic)

DMSO : 5 mg/mL (18.23 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6454 mL	18.2269 mL	36.4538 mL
	5 mM	0.7291 mL	3.6454 mL	7.2908 mL
	10 mM	0.3645 mL	1.8227 mL	3.6454 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 (437.45 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.5 mg/mL (1.82 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.5 mg/mL (1.82 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.5 mg/mL (1.82 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Terbutaline sulfate is an orally active β_2-adrenergic receptor agonist and an active metabolite of bambuterol[1]. Terbutaline sulfate can be used in asthma symptom research[2].

IC_{50} & Target

β adrenergic receptor

In Vitro

Terbutaline sulfate (0-10 μM, 1 hour) enhances MKP-1 expression in activated mouse macrophages[3].

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

RT-PCR[3]

Cell Line:	J774 macrophages
Concentration:	0-10 μM
Incubation Time:	1 hour
Result:	Enhanced MKP-1 expression in J774 macrophages in a dose-dependent manner.

Western Blot Analysis[3]

Cell Line:	J774 macrophages
Concentration:	100 nM
Incubation Time:	1 hour
Result:	Reduced the phosphorylation of p38 MAPK in J774 macrophages.

In Vivo

Terbutaline sulfate (intraperitoneal injection; 0.5 mg/kg; twice a day; 20 days) treatment can improve the allodynia in ob/ob mice[4].

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

Animal Model:	Adult male ob/ob mice[4]
Dosage:	0.5 mg/kg
Administration:	Intraperitoneal injection; 0.5 mg/kg; twice a day; 20 days
Result:	Reversed the mechanical allodynia in ob/ob mice.

REFERENCES

[1]. Joana A Loureiro, et al. The interaction of a β2 adrenoceptor agonist drug with biomimetic cell membrane models: The case of terbutaline sulphate. Life Sci. 2021 Nov 15;285:119992.

[2]. Tiina Keränen, et al. Anti-Inflammatory Effects of β2-Receptor Agonists Salbutamol and Terbutaline Are Mediated by MKP-1. PLoS One. 2016 Feb 5;11(2):e0148144.

[3]. Nada Choucair-Jaafar, et al. The antiallodynic action of nortriptyline and terbutaline is mediated by β(2) adrenoceptors and δ opioid receptors in the ob/ob model of diabetic polyneuropathy. Brain Res. 2014 Feb 10;1546:18-26.

[4]. Mohamed Ismail NA, et al. Nifedipine versus terbutaline for tocolysis in external cephalic version. Int J Gynaecol Obstet. 2008 Sep;102(3):263-6.

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