Atracurium besylate

Cat. No.: HY-B0292A

CAS No.: 64228-81-5

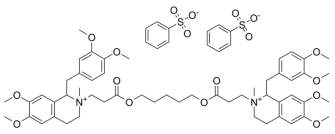
Molecular Formula: $C_{65}H_{82}N_2O_{18}S_2$

Molecular Weight: 1243.48

Target: nAChR

Pathway: Membrane Transporter/Ion Channel; 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 : 125 mg/mL (100.52 mM; Need ultrasonic)
H_2O : 50 mg/mL (40.21 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.8042 mL	4.0210 mL	8.0419 mL
5 mM	0.1608 mL	0.8042 mL	1.6084 mL
10 mM	0.0804 mL	0.4021 mL	0.8042 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (80.42 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 (2.01 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.01 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.01 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Atracurium (BW-33A) besylate is a potent, competitive and non-depolarizing neuromuscular blocking agent. Atracurium besylate also is an AChR receptor antagonist. Atracurium besylate induces bronchoconstriction and neuromuscular blockade. Atracurium besylate promotes astroglial differentiation[1][2][3][4][5].

In Vitro

Atracurium besylate (10 μM; 72 h) promotes astroglial but not neuronal differentiation in HSR040622 and HSR040821 cells[4].
Atracurium besylate (10 μM; 48 h) reduces tumor engraftment and increases survival of mice xenotransplanted with ex-vivo

treated GSCs[4].
Atracurium besylate (2.4 μM; 120 min) induces a complete fade of the tetanic contraction while only slightly affected the twitch in rat extensor digitorum longus muscle cells[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[4]

Cell Line:	glioblastoma stem (GSC) cells
Concentration:	3, 10, 20 μM
Incubation Time:	72 h
Result:	Increased the percentage of GFP-positive cells in a dose-dependent manner from 5.3% in DMSO to 15.4%, 81.1%, and 86.8% in 3 μM, 10 μM, and 20 μM, respectively.

In Vivo

Atracurium besylate (1, 5, 10, 20, 50 mg/kg; i.v.) induces bronchoconstriction in DBA/2 and SJL mice[2].
Atracurium besylate (4.8 mg/kg; i.v.) induces neuromuscular blockade in rats[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	5-12 weeks, 15-20 g male mice[2]
Dosage:	1, 5, 10, 20, 50 mg/kg
Administration:	I.v.
Result:	Induced bronchoconstriction and Atracurium-induced airway hyperresponsiveness in DBA/2 mice was eliminated in a dose-dependent manner by pretreatment with atropine or pancuronium.

Animal Model:	290 ± 30 g Male Sprague±Dawley rats (60 mg/kg heat-killed Corynebacteriumparvum for i.v.)[3]
Dosage:	4.8 mg/kg
Administration:	I.v.
Result:	Induced neuromuscular blockade in Corynebacteriumparvum-injected rats.

REFERENCES

[1]. Basta SJ, et al. Clinical pharmacology of atracurium besylate (BW 33A): a new non-depolarizing muscle relaxant. Anesth Analg. 1982 Sep;61(9):723-9.

[2]. Levitt RC, et al. Genetic susceptibility to atracurium-induced bronchoconstriction. Am J Respir Crit Care Med. 1995 May;151(5):1537-42.

[3]. Mayer B, et al. Inflammatory liver disease shortens atracurium-induced neuromuscular blockade in rats. Eur J Anaesthesiol. 2001 Sep;18(9):599-604.

[4]. Spina R, et al. Atracurium Besylate and other neuromuscular blocking agents promote astroglial differentiation and deplete glioblastoma stem cells. Oncotarget. 2016 Jan 5;7(1):459-72.

[5]. Nascimento DC, et al. Cellular mechanisms of atracurium-induced tetanic fade in the isolated rat muscle. Basic Clin Pharmacol Toxicol. 2004 Jul;95(1):9-14.

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

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