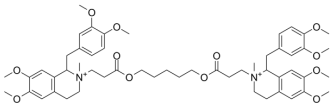
Atracurium

Cat. No.:	HY-B0292
CAS No.:	64228-79-1
Molecular Formula:	$C_{53}H_{72}N_2O_{12}^{2+}$
Molecular Weight:	929.14
Target:	nAChR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

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

In Vitro

Atracurium (10 μM; 72 h) promotes astroglial but not neuronal differentiation in HSR040622 and HSR040821 cells[4].
Atracurium (10 μM; 48 h) reduces tumor engraftment and increases survival of mice xenotransplanted with ex-vivo treated GSCs[4].
Atracurium (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 (1, 5, 10, 20, 50 mg/kg; i.v.) induces bronchoconstriction in DBA/2 and SJL mice[2].
Atracurium (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.

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