Rocuronium Bromide

Cat. No.: HY-17440

CAS No.: 119302-91-9

Molecular Formula: $C_{32}H_{53}BrN_2O_4$

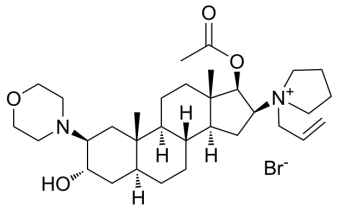
Molecular Weight: 609.68

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 : 100 mg/mL (164.02 mM; Need ultrasonic)

H_2O : 100 mg/mL (164.02 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.6402 mL	8.2010 mL	16.4020 mL
5 mM	0.3280 mL	1.6402 mL	3.2804 mL
10 mM	0.1640 mL	0.8201 mL	1.6402 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 (164.02 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Rocuronium Bromide (ORG 9426 Bromide) is an aminosteroid non-depolarizing neuromuscular blocker or muscle relaxant used in modern anaesthesia, to facilitate endotracheal intubation and to provide skeletal musclerelaxation during surgery or mechanical ventilation.

In Vitro

Rocuronium reduced the indirectly elicited twitch tensions in normal (50% inhibitory concentration [IC(50)], 9.84 [9.64-10.04] μM, mean [95% confidence interval]) and all pretreated diaphragms ($P < .01$, $n = 6$) in a concentration-dependent fashion [1]. The ED95 of rocuronium is essentially the same for children as for adults. Its duration of action is similar to vecuronium, and it is shorter for children than for adults. Rocuronium is readily reversed with conventional doses of cholinesterase-inhibiting drugs [2]. Onset time until maximum block, duration until 25% recovery of twitch height, and recovery from 25 until 75% of twitch height were 1.7 (32), 53 (19) and 20 (37) min, respectively [3].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Only 8.7±5.7% (SD) and 6.0±2.8% of an injected dose of ORG 9426 and ORG 9616 was excreted into the urine, respectively. Conversely, 54.4±9.2% and 52.4±9.2% of an injected dose of ORG 9426 and 35.7±12.2% and 46.8±9.7% of ORG 9616 were excreted into the bile in cats without and with renal pedicle ligation, respectively [4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Rep. 2017 Apr 5;7:46098.
- Hum Mol Genet. 2015 Aug 15;24(16):4648-59.

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REFERENCES

[1]. Narimatsu E, Niiya T, Takahashi K, Pralidoxime inhibits paraoxon-induced depression of rocuronium-neuromuscular block in a time-dependentfashion. Am J Emerg Med. 2012 Jul;30(6):901-7.

[2]. Wicks TC. The pharmacology of rocuronium bromide (ORG 9426). AANA J. 1994 Feb;62(1):33-8.

[3]. Wierda JM, Kleef UW, Lambalk LM, The pharmacodynamics and pharmacokinetics of Org 9426, a new non-depolarizing neuromuscular blocking agent, in patients anaesthetized with nitrous oxide, halothane and fentanyl. Can J Anaesth. 1991 May;38(4 Pt 1):430-5.

[4]. Khuenl-Brady K, Castagnoli KP, Canfell PC, The neuromuscular blocking effects and pharmacokinetics of ORG 9426 and ORG 9616 in the cat. Anesthesiology. 1990 Apr;72(4):669-74.

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