

Product Data Sheet

Product Name: Pipecuronium bromide

Cat. No.: GC38938

Chemical Properties

Cas. No. 52212-02-9

SMILES C[C@@]1([C@H]2OC(C)=O)[C@](C[C@@H]2N3CC[N+](C)(C)CC3)([H])[C@@](CC[C@]4([H])[C@@]5(C[C@H](N6CC[N+](C)(C)CC6)[C@@H](OC(C)=O)C4)C)([H])[C@]5([H])CC1.[Br-].[Br-]

Formula C₃₅H₆₂Br₂N₄O₄ M.Wt 762.7

Solubility DMSO : 150 mg/mL (196.67 mM; Need ultrasonic); H₂O : 100 mg/mL (131.11 mM; Need ultrasonic) Store Storage at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Pipecuronium bromide is a potent long-acting nondepolarizing steroidal neuromuscular blocking agent (NMBA), and a bisquaternary ammonium compound. Pipecuronium bromide is a powerful competitive nAChR antagonist with a K_d of 3.06 μM[1][2][3][4][5].

Sugammadex has a high affinity for Pipecuronium bromide. As Pipecuronium bromide is about 6 to 7 times more potent than Rocuronium, fewer molecules are required to achieve a comparative blockade than in the case of Rocuronium[1].

The average ED₉₅ is 0.045mg/kg (0.035-0.059 mg/kg) of Pipecuronium bromide, the onset of action varies between 2 and 6.3 minutes, depending on the dose and the background anesthesia. Pipecuronium bromide does not liberate histamine, it has no cardiovascular side effects even in doses of 3× ED₉₅, and anaphylaxis does not appear to be a problem[2]. Carboxymethylated γ-cyclodextrin shows efficient and complete

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reversal of the Pipecuronium bromide induced neuromuscular block in an ex vivo rat diaphragm experiment[3].

[1]. Tassonyi E, et al. Reversal of Pipecuronium-Induced Moderate Neuromuscular Block with Sugammadex in the Presence of a Sevoflurane Anesthetic: A Randomized Trial. *Anesth Analg*. 2015 Aug;121(2):373-80. [2]. Tassonyi E, et al. Reversal of Deep Pipecuronium-Induced Neuromuscular Block With Moderate Versus Standard Dose of Sugammadex: A Randomized, Double-Blind, Noninferiority Trial. *Anesth Analg*. 2018 Dec;127(6):1344-1350. [3]. AlÁnt O, et al. First clinical experience with a new neuromuscular blocker pipecurium bromide. *Arzneimittelforschung*. 1980;30(2a):374-9. [4]. TÖrÖcsik A, et al. Characterization of somatodendritic neuronal nicotinic receptors located on the myenteric plexus. *Eur J Pharmacol*. 1991 Sep 24;202(3):297-302. [5]. KÁrpÁti E, et al. Investigation of neuromuscular blocking agents at Richter Ltd. *Acta Pharm Hung*. 2002;72(1):37-48.

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