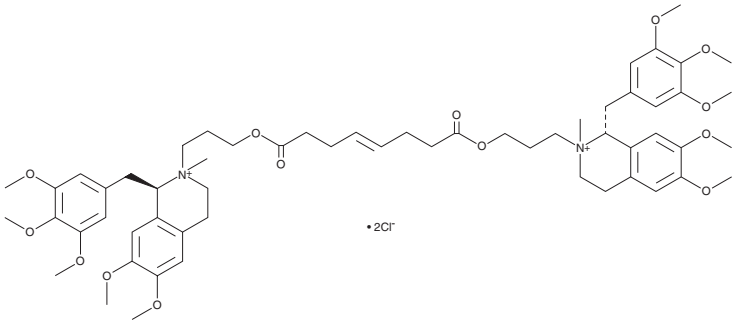
PRODUCT INFORMATION

Mivacurium (chloride)

Item No. 23610

CAS Registry No.: 106861-44-3
Formal Name: (1R,1'R)-2,2'-[[(4E)-1,8-dioxo-4-octene-1,8-diyl] bis(oxy-3,1-propanediyl)] *bis*[1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-[(3,4,5-trimethoxyphenyl)methyl] isoquinolinium, dichloride
MF: $C_{58}H_{80}N_2O_{14} \bullet 2Cl$
FW: 1,100.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Mivacurium (chloride) is supplied as a solid. A stock solution may be made by dissolving the mivacurium (chloride) in the solvent of choice, which should be purged with an inert gas. Mivacurium (chloride) is soluble in the organic solvent DMSO. Mivacurium (chloride) is also soluble in water. We do not recommend storing the aqueous solution for more than one day.

Description

Mivacurium is an antagonist of nicotinic acetylcholine receptors (nAChRs) and muscarinic M_2 and M_3 receptors (ED_{50}s = 0.08, 0.3, and 0.1 mg/kg for *ex vivo* human skeletal muscle nAChRs, guinea pig cardiac M_2 receptors, and guinea pig bronchial M_3 receptors, respectively).[1] It inhibits acetylcholine-induced activation of neuronal nAChRs (IC_{50}s = 69.04, 3.71, 1.52, and 2.90 for human α3β2-, α3β4-, α4β2-, and α7-containing nAChRs expressed in *Xenopus* oocytes).[2] Mivacurium also inhibits adult human muscular α1β1εδ-containing AChRs (IC_{50} = 3.69 nM in *Xenopus* oocytes expressing the human recombinant receptor). *In vivo*, mivacurium inhibits bradycardia and bronchoconstriction induced by vagal stimulation or acetylcholine in guinea pigs.[1] It also induces neuromuscular blockade (ED_{95} = 80 µg/kg) in sheep with a more rapid onset time than atracurium (Item No. 17796) and vecuronium (Item No. 15603).[3] Formulations containing mivacurium have been used for pediatric anesthesia.[4]

References

1. Okanlami, O.A., Fryer, A.D., and Hirshman, C. Interaction of nondepolarizing muscle relaxants with M_2 and M_3 muscarinic receptors in guinea pig lung and heart. *Anesthesiology* **84(1)**, 155-161 (1996).
2. Johnsson, M., Gurley, D., Dabrowski, M., *et al.* Distinct pharmacologic properties of neuromuscular blocking agents on human neuronal nicotinic acetylcholine receptors: A possible explanation for the train-of-four fade. *Anesthesiology* **105(3)**, 521-533 (2006).
3. Clutton, R.E. and Glasby, M.A. A comparison of the neuromuscular and cardiovascular effects of vecuronium, atracurium and mivacurium in sheep. *Res. Vet. Sci.* **64(3)**, 233-237 (1998).
4. Zeng, R., Liu, X., Zhang, J., *et al.* The efficacy and safety of mivacurium in pediatric patients. *BMC Anesthesiol.* **17(1)**, 58 (2017).

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