Pancuronium dibromide

Cat. No.: HY-B0429

CAS No.: 15500-66-0

Molecular Formula: $C_{35}H_{60}Br_2N_2O_4$

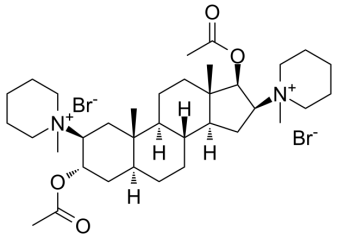
Molecular Weight: 732.67

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

H_2O : 100 mg/mL (136.49 mM; Need ultrasonic)

DMSO : ≥ 100 mg/mL (136.49 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	1.3649 mL	6.8244 mL	13.6487 mL
5 mM	0.2730 mL	1.3649 mL	2.7297 mL
10 mM	0.1365 mL	0.6824 mL	1.3649 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 (136.49 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 (3.41 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (3.41 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (3.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pancuronium dibromide, a bis-quaternary steroid, is a neuromuscular relaxant. Pancuronium dibromide inhibits neuromuscular transmission by competing with acetylcholine for binding sites on nACh receptors. Pancuronium dibromide also inhibits cardiac muscarinic receptors and has a sympathomimetic action[1][2][3].

In Vitro

The action of Pancuronium on transmembrane sodium conductance is investigated in dorsal root ganglion neurones of

	chick embryos. Externally perfused Pancuronium (50 μM to 1 mM) reversibly inhibits the current by a fast mechanism of action. Inhibition is concentration-dependent (with a half-effective dose of 170 μM) but not voltage-dependent. Pancuronium may reduce the sodium current by interacting with the sodium channels in both the resting and open states[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Pancuronium (0.5 mg/kg; intravenous injection) abolishes the bradycardia induced both by injected acetylcholine (ACh) and by vagal nerve stimulation in guinea-pigs (250-300 g, male). At doses which produce 100% neuromuscular blockade, Pancuronium (0.04 mg/kg) potentiates vagally-induced bronchoconstriction[1]. Potentiation by Pancuronium of the effects of adrenergic nerve stimulation, is found in rat anococcygeus and vas deferens[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. A D Fryer, et al. Pancuronium and gallamine are antagonists for pre- and post-junctional muscarinic receptors in the guinea-pig lung. Naunyn Schmiedebergs Arch Pharmacol. 1987 Apr;335(4):367-71.

[2]. E Maestrone, et al. Extracellular pancuronium affects sodium current in chick embryo sensory neurons. Br J Pharmacol. 1994 Jan;111(1):283-7.

[3]. J R Docherty, et al. A comparison of the effects of pancuronium bromide and its monoquaternary analogue, ORG NC 45, on autonomic and somatic neurotransmission in the rat. Br J Pharmacol. 1980;71(1):225-33.

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