Decamethonium Bromide

Cat. No.: HY-B0570

CAS No.: 541-22-0

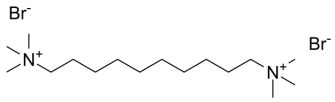
Molecular Formula: $C_{16}H_{38}Br_2N_2$

Molecular Weight: 418.29

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 : 83.33 mg/mL (199.22 mM; Need ultrasonic)
H_2O : ≥ 50 mg/mL (119.53 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3907 mL	11.9534 mL	23.9069 mL
	5 mM	0.4781 mL	2.3907 mL	4.7814 mL
	10 mM	0.2391 mL	1.1953 mL	2.3907 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 (239.07 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.97 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.97 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.97 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Decamethonium Bromide is a nicotinic AChR partial agonist and neuromuscular blocking agent.Target: nAChRDecamethonium (Syncurine) is a depolarizing muscle relaxant or neuromuscular blocking agent, and is used in anesthesia to induce paralysis. Decamethonium, which has a short action time, is similar to acetylcholine and acts as a partial agonist of the nicotinic acetylcholine receptor. In the motor endplate, it causes depolarization, preventing further effects to the normal release of acetylcholine from the presynaptic terminal, and therefore preventing the neural stimulus

from affecting the muscle. In the process of binding, decamethonium actually activates (depolarizes) the motor endplate, but since the decamethonium itself is not degraded, the membrane remains depolarized and unresponsive to normal acetylcholine release [1].

REFERENCES

[1]. Marcheselli, M., C. Rustichelli, and M. Mauri, Novel antifouling agent zinc pyrithione: determination, acute toxicity, and bioaccumulation in marine mussels (Mytilus galloprovincialis). Environ Toxicol Chem, 2010. 29(11): p. 2583-92.

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