



Product Information

(+)-Tubocurarine chloride hydrate

Product Number **T 2379**

Storage Temperature 2-8 °C

Product Description

CAS Number: 57-94-3

Molecular Formula: $C_{37}H_{42}Cl_2N_2O_6$ (anhydrous)

Molecular Weight: 681.7

λ_{max} : 280 nm

Extinction coefficient: $E^{1\%} = 118$ (H_2O)¹

Specific rotation: $[\alpha]_D^{23} = +190^\circ$

($c = 0.785$, in methanol)¹

Synonym: d-tubocurarine chloride hydrate

(+)-Tubocurarine chloride is the physiologically active component of curare, which was discovered in the South American plant liana (*Chondodendron tomentosum*).^{1,2} It is a competitive, non-depolarizing agonist at neuromuscular junctions and is a skeletal muscle relaxant.³ (+)-tubocurarine competes with acetylcholine for receptors on the motor-end plate of the neuromuscular junction, leading to blockade and paralysis of voluntary muscles.^{4,5} It does not activate the junction receptors and, thus, binding does not lead to contraction.

The structure of (+)-tubocurarine contains two quaternary nitrogen atoms, which are positively charged. Thus, (+)-tubocurarine cannot cross membranes, and will not cross the blood/brain barrier.

(+)-tubocurarine has been investigated widely in studies on neurotransmission, including its effect on auditory brain-stem evoked potentials⁶ and in norepinephrine release from atrial tissue.⁷ It has also been used in the study of nicotine-mediated blockage of antibacterial activity by macrophages, through competitive binding of (+)-tubocurarine to murine macrophage nicotinic acetylcholine receptors.⁸ A study of the molecular interaction of (+)-tubocurarine with the muscle nicotinic acetylcholine receptor binding site has been reported.⁹

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (50 mg/ml) with heating as needed, yielding a clear to slightly hazy, colorless to yellow solution. It has also been reported to be soluble in ethanol and methanol.¹

Storage/Stability

Aqueous solutions of (+)-tubocurarine can be sterilized by autoclaving.

References

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