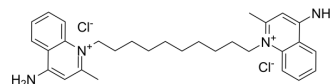


## Dequalinium Chloride

<b>Cat. No.:</b>	HY-B0567
<b>CAS No.:</b>	522-51-0
<b>Molecular Formula:</b>	C <sub>30</sub> H <sub>40</sub> Cl <sub>2</sub> N <sub>4</sub>
<b>Molecular Weight:</b>	527.57
<b>Target:</b>	Potassium Channel; nAChR; Apoptosis; Bacterial; Parasite
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling; Apoptosis; Anti-infection
<b>Storage:</b>	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<sub>2</sub>O : 0.99 mg/mL (1.88 mM; ultrasonic and warming and adjust pH to 3 with 1 M HCL and heat to 60°C)  
DMSO : < 1 mg/mL (insoluble or slightly soluble)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.8955 mL	9.4774 mL	18.9548 mL
	5 mM	---	---	---
	10 mM	---	---	---

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Dequalinium chloride is an Apamin (HY-P0256)-sensitive potassium channel selective blocker. Dequalinium chloride is a cationic, lipophilic mitochondrial poison. Dequalinium chloride is also an antagonist of  $\alpha 7$  nAChR, and an anti-microbial antiseptic agent with a broad bactericidal and fungicidal activity<sup>[1][2][3][4]</sup>.

#### In Vitro

Dequalinium chloride blocks angiotensin II (100 nM)-evoked K<sup>+</sup> loss in guinea-pig hepatocytes, with an IC<sub>50</sub> of 1.5  $\mu$ M<sup>[5]</sup>. Dequalinium (0-100  $\mu$ g/mL, 72 h) chloride inhibits cell growth in human Pca cell lines (PC3, DU145, LNCaP, MDA-PCA-2B), and induces cell apoptosis in PC3 cells (0.9  $\mu$ M, 4 h)<sup>[7]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Dequalinium chloride shows a LD<sub>50</sub> of 18.3 mg/kg in mice (i.p., a single time)<sup>[2]</sup>. Dequalinium chloride (2 mg/kg, i.p., daily for 10 days) inhibits the tumor growth of mouse bladder carcinoma MB49<sup>[3]</sup>. Dequalinium chloride (2 mg/kg, s.c.) reduces Diisopropylfluorophosphate-induced tremors (organophosphate poisoning) in mice<sup>[6]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

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- [2]. Mendling W, et al. Use of locally delivered dequalinium chloride in the treatment of vaginal infections: a review. *Arch Gynecol Obstet*. 2016 Mar;293(3):469-84.
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- [4]. Bugay V, et al. Effects of Sublethal Organophosphate Toxicity and Anti-cholinergics on Electroencephalogram and Respiratory Mechanics in Mice. *Front Neurosci*. 2022 May 2;16:866899.
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- [7]. Gamboa-Vujicic, G., et al., Toxicity of the mitochondrial poison dequalinium chloride in a murine model system. *J Pharm Sci*, 1993. 82(3): p. 231-5.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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