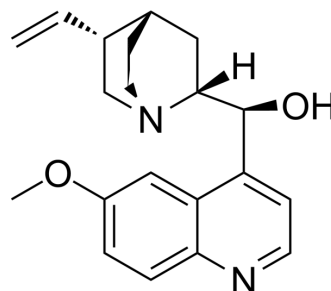


Quinidine (15% dihydroquinidine)

Cat. No.:	HY-B1751
CAS No.:	56-54-2
Molecular Formula:	C ₂₀ H ₂₄ N ₂ O ₂
Molecular Weight:	324.42
Target:	Potassium Channel; Cytochrome P450; Apoptosis; Parasite
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; Apoptosis; Anti-infection
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 1 year; -20°C, 6 months (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (154.12 mM)
 Ethanol : 14.29 mg/mL (44.05 mM); ultrasonic and warming and heat to 60°C
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.0824 mL	15.4121 mL	30.8242 mL
	5 mM	0.6165 mL	3.0824 mL	6.1648 mL
	10 mM	0.3082 mL	1.5412 mL	3.0824 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Quinidine (15% dihydroquinidine) is an antiarrhythmic agent. Quinidine is a potent, orally active, selective cytochrome P450db inhibitor. Quinidine is also a K⁺ channel blocker with an IC₅₀ of 19.9 μM, and can induce apoptosis. Quinidine can be used for malaria research^{[1][2][3][4]}.

IC₅₀ & Target	Plasmodium
In Vitro	Quinidine shows cytotoxicity against MES-SA cells, and induces apoptosis ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Cytotoxicity Assay ^[4]
	Cell Line: MES-SA and MESSA/DX5 cells
	Concentration: 10 μM
	Incubation Time: 24 hours
	Result: Showed cytotoxicity against MES-SA cells in a concentration-dependent manner.
	Apoptosis Analysis ^[4]
	Cell Line: MES-SA and MESSA/DX5 cells
	Concentration: 10 μM
	Incubation Time: 24 hours
	Result: Increased the apoptotic portion sub-G1 DNA contents induced by paclitaxel, while paclitaxel had no effect on sub-G1 DNA contents undergoing apoptosis.
In Vivo	Quinidine shows effects on the PTZ-induced seizure threshold ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
	Animal Model: Male mice of the NMRI strain (age 5-6 weeks and weight 25-30 g) ^[5]
	Dosage: 10, 20, and 30 mg/kg
	Administration: Intraperitoneal injection; 10, 20, and 30 mg/kg; once
	Result: Increased the threshold dose for the onset to tonic hind limb extension at a dose of 30 mg/kg, compared to the saline-treated control group (p<0.05).

CUSTOMER VALIDATION

- J Hazard Mater. 2021 Aug 15;416:125764.
- Environ Int. 2019 Jun;127:694-703.
- Chemosphere. 2021, 131347.
- J Med Chem. 2021 Mar 11;64(5):2725-2738.
- J Med Chem. 2020 Oct 8;63(19):11085-11099.

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REFERENCES

[1]. Sang-Yun Lee, et al. Hydroquinone, cinchonine, and quinidine potentiate paclitaxel-induced cytotoxicity and apoptosis via multidrug resistance reversal in MES-SA/DX5 uterine sarcoma cells. Environ Toxicol. 2011 Aug;26(4):424-31.

[2]. Hassan Jamali, et al. Effect of dextromethorphan/quinidine on pentylenetetrazole- induced clonic and tonic seizure thresholds in mice. *Neurosci Lett.* 2020 Jun 11;729:134988.

[3]. Moody DE, et al. Quinidine inhibits in vivo metabolism of amphetamine in rats: impact upon correlation between GC/MS and immunoassay findings in rat urine. *J Anal Toxicol.* 1990 Sep-Oct;14(5):311-7.

[4]. Kehl SJ, et al. Quinidine-induced inhibition of the fast transient outward K⁺ current in rat melanotrophs. *Br J Pharmacol.* 1991 Jul;103(3):1807-13.

[5]. Roden DM, et al. Class I antiarrhythmic agents: quinidine, procainamide and N-acetylprocainamide, disopyramide.

Caution: Product has not been fully validated for medical applications. For research use only.

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