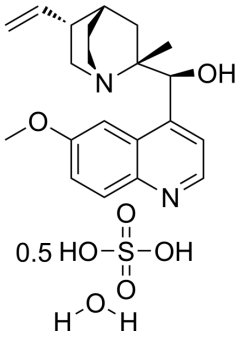
Quinidine sulfate dihydrate

Cat. No.:	HY-B1751D
CAS No.:	6591-63-5
Molecular Formula:	$C_{21}H_{30}N_2O_7S$
Molecular Weight:	405.5
Target:	Cytochrome P450; Parasite; Potassium Channel; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Anti-infection; Membrane Transporter/Ion Channel; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Quinidine sulfate dihydrate is an antiarrhythmic agent. Quinidine sulfate dihydrate is a potent, orally active, selective cytochrome P450db inhibitor. Quinidine sulfate dihydrate is also a K^+ channel blocker with an IC_{50} of 19.9 μM, and can induce apoptosis. Quinidine sulfate dihydrate can be used for malaria research[1][2][3][4].

IC_{50} & Target

Plasmodium

In Vitro

Quinidine sulfate dihydrate 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 sulfate dihydrate 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]. 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.

[2]. Sang-Yun Lee, et al. Hydrocinchonine, 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.

[3]. 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.

[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.

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