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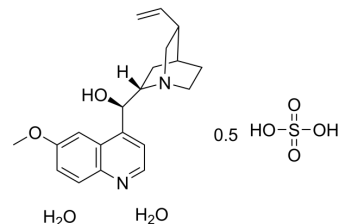
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Quinine sulfate hydrate

Cat. No.:	HY-W010668
CAS No.:	6119-70-6
Molecular Formula:	C ₂₀ H ₂₄ N ₂ O ₂ ·1/2H ₂ SO ₄ ·2H ₂ O
Molecular Weight:	409.48
Target:	Parasite; Potassium Channel; Flavivirus; Dengue virus
Pathway:	Anti-infection; Membrane Transporter/Ion Channel
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 2 mg/mL (4.88 mM; ultrasonic and warming and heat to 60°C)
H₂O : 2 mg/mL (4.88 mM; ultrasonic and warming and heat to 60°C)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.4421 mL	12.2106 mL	24.4212 mL
	5 mM		---	---	---
	10 mM		---	---	---

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

BIOLOGICAL ACTIVITY

Description

Quinine sulfate hydrate (2:1:4) is an orally active alkaloid extracted from cinchona bark and can be used in anti-malarial studies. Quinine sulfate hydrate (2:1:4) is a potassium channel inhibitor that inhibits WT mouse Slo3 (K_{Ca}5.1) channel currents evoked by voltage pulses to +100 mV with an IC₅₀ of 169 μM^{[1][2]}.

In Vitro

Quinine sulfate hydrate (150 μM, 30 min) inhibits the proliferation and cytostatic effects of DENV (Dengue virus) in human hepatocarcinoma HepG2 cell line^[1].
Quinine sulfate hydrate (37.5-150 μM, 24 hours) significantly reduces viral DENV RNA and protein levels in a dose-dependent manner in human hepatocarcinoma HepG2 cell line^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Proliferation Assay^[1]

Cell Line:	Human hepatocarcinoma cell line(HepG2)
Concentration:	150 μM

	Incubation Time:	30 min
	Result:	Inhibited DENV virus replication with 19% yield compared to untreated. Reduced DENV-positive cells from 23.28% to 12.05% in a dose-dependent manner.
In Vivo	<p>Quinine sulfate hydrate (oral gavage, 12 or 15 mg/kg, every week, 16 weeks) has some tumor suppressing effect on skin cancer in Swiss albino mice^[2].</p> <p>Quinine sulfate hydrate (oral gavage, 10 mg/kg, everyday, 8 weeks) causes a decrease in the antioxidant defense system of rat testicular tissue such as SOD, CAT and GSH enzyme activity in male adult albino rats^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
	Animal Model:	Swiss albino mice 7-8-weeks (weighing 24 g) ^[2]
	Dosage:	12 mg/kg, 15 mg/kg
	Administration:	Oral gavage; every week; 16 weeks
	Result:	Resulted in a significant reduction in tumor size and weight at 12 mg/kg and little effect at higher dose of 15 mg/kg.

CUSTOMER VALIDATION

- ACS Omega. 2024 Feb 28;9(10):11870-11882.
- Mol Med Rep. 2021 Mar 2.
- Norwegian University of Science and Technology, Faculty of Medicine and Health sciences. 2019 Sep.

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REFERENCES

- [1]. Shilu Malakar et al. Drug repurposing of quinine as antiviral against dengue virus infection. Virus Res. 2018 Aug 15;255:171-178. doi: 10.1016/j.virusres.2018.07.018. Epub 2018 Jul 25.
- [2]. Jhanwar, Deepika et al. Chemoprevention of DMBA induced skin carcinogenesis in swiss albino mice by quinine sulfate.(2016): 2636-2640.
- [3]. Ebenezer O Farombi, et al. Quercetin protects against testicular toxicity induced by chronic administration of therapeutic dose of quinine sulfate in rats. J Basic Clin Physiol Pharmacol. 2012 Feb 27;23(1):39-44

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

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