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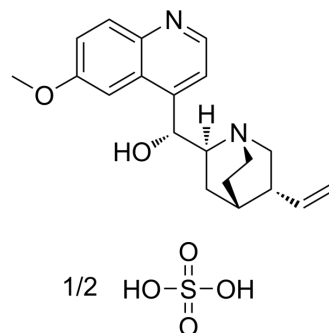
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Quinine hemisulfate

Cat. No.:	HY-B0433B
CAS No.:	804-63-7
Molecular Formula:	C ₂₀ H ₂₄ N ₂ O ₂ ·1/2H ₂ SO ₄
Molecular Weight:	373.45
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)



BIOLOGICAL ACTIVITY

Description	Quinine hemisulfate is an orally active alkaloid extracted from cinchona bark and can be used in anti-malarial studies. Quinine hemisulfate 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 IC ₅₀ of 169 μM ^{[1][2]} .								
IC₅₀ & Target	Plasmodium								
In Vitro	<p>Quinine hemisulfate (150 μM, 30 min) inhibits the proliferation and cytostatic effects of DENV (Dengue virus) in human hepatocarcinoma HepG2 cell line^[1].</p> <p>Quinine hemisulfate (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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Human hepatocarcinoma cell line(HepG2)</td> </tr> <tr> <td>Concentration:</td> <td>150 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>30 min</td> </tr> <tr> <td>Result:</td> <td>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.</td> </tr> </table>	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.
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In Vivo	<p>Quinine hemisulfate (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 hemisulfate (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> <table border="1"> <tr> <td>Animal Model:</td> <td>Swiss albino mice 7-8-weeks (weighing 24 g)^[2]</td> </tr> <tr> <td>Dosage:</td> <td>12 mg/kg, 15 mg/kg</td> </tr> </table>	Animal Model:	Swiss albino mice 7-8-weeks (weighing 24 g) ^[2]	Dosage:	12 mg/kg, 15 mg/kg				
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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

- 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]. 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.
- [3]. Jhanwar, Deepika et al. Chemoprevention of DMBA induced skin carcinogenesis in swiss albino mice by quinine sulfate.(2016): 2636-2640.

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

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