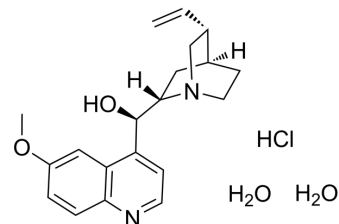


## Quinine hydrochloride dihydrate

<b>Cat. No.:</b>	HY-B0433A
<b>CAS No.:</b>	6119-47-7
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>29</sub> ClN <sub>2</sub> O <sub>4</sub>
<b>Molecular Weight:</b>	396.91
<b>Target:</b>	Parasite; Potassium Channel; Flavivirus; Dengue virus
<b>Pathway:</b>	Anti-infection; Membrane Transporter/Ion Channel
<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

<b>In Vitro</b>	DMSO : ≥ 100 mg/mL (251.95 mM) H <sub>2</sub> O : 20 mg/mL (50.39 mM; Need ultrasonic) * "≥" means soluble, but saturation unknown.																							
	<table border="1"> <thead> <tr> <th rowspan="2">Preparing Stock Solutions</th> <th>Solvent Concentration</th> <th>Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td>1 mM</td> <td>2.5195 mL</td> <td>12.5973 mL</td> <td>25.1946 mL</td> <td></td> <td></td> </tr> <tr> <td>5 mM</td> <td>0.5039 mL</td> <td>2.5195 mL</td> <td>5.0389 mL</td> <td></td> <td></td> </tr> <tr> <td>10 mM</td> <td>0.2519 mL</td> <td>1.2597 mL</td> <td>2.5195 mL</td> <td></td> <td></td> </tr> </tbody> </table> <p>Please refer to the solubility information to select the appropriate solvent.</p>	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	1 mM	2.5195 mL	12.5973 mL	25.1946 mL			5 mM	0.5039 mL	2.5195 mL	5.0389 mL			10 mM	0.2519 mL	1.2597 mL	2.5195 mL	
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<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 2.6 mg/mL (6.55 mM); Clear solution; Need ultrasonic and warming and heat to 60°C																							

### BIOLOGICAL ACTIVITY

<b>Description</b>	Quinine hydrochloride dihydrate (Qulaquin) is an orally active and can be used in anti-malarial studies. Quinine hydrochloride dihydrate is a potassium channel inhibitor that inhibits WT mouse Slo3 (K <sub>Ca</sub> 5.1) channel currents evoked by voltage pulses to +100 mV with an IC <sub>50</sub> of 169 μM <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Plasmodium
<b>In Vitro</b>	Quinine hydrochloride dihydrate (150 μM, 30 min) inhibits the proliferation and cytostatic effects of DENV (Dengue virus) in human hepatocarcinoma HepG2 cell line <sup>[1]</sup> . Quinine hydrochloride dihydrate (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 <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### Cell Proliferation Assay<sup>[1]</sup>

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

Quinine hydrochloride dihydrate (oral gavage, 12 or 15 mg/kg, every week, 16 weeks) has some tumor suppressing effect on skin cancer in Swiss albino mice<sup>[2]</sup>.

Quinine hydrochloride dihydrate (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<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Swiss albino mice 7-8-weeks (weighing 24 g) <sup>[2]</sup>
Dosage:	Swiss albino mice 7-8-weeks (weighing 24 g) <sup>[2]</sup>
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]. 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-

[4]. White, N.J., et al., Quinine pharmacokinetics and toxicity in cerebral and uncomplicated Falciparum malaria. Am J Med, 1982. 73(4): p. 564-72.

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

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