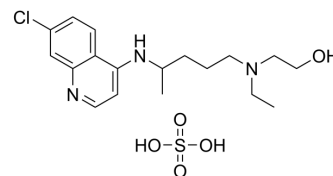


## Hydroxychloroquine sulfate

<b>Cat. No.:</b>	HY-B1370
<b>CAS No.:</b>	747-36-4
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>28</sub> ClN <sub>3</sub> O <sub>5</sub> S
<b>Molecular Weight:</b>	434
<b>Target:</b>	Parasite; Toll-like Receptor (TLR); Autophagy; SARS-CoV
<b>Pathway:</b>	Anti-infection; Immunology/Inflammation; Autophagy
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 110 mg/mL (253.46 mM; Need ultrasonic and warming)			
	DMSO : 100 mg/mL (230.41 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
<b>Preparing Stock Solutions</b>	1 mM	2.3041 mL	11.5207 mL	23.0415 mL
	5 mM	0.4608 mL	2.3041 mL	4.6083 mL
	10 mM	0.2304 mL	1.1521 mL	2.3041 mL
Please refer to the solubility information to select the appropriate solvent.				
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (230.41 mM); Clear solution; Need ultrasonic			

### BIOLOGICAL ACTIVITY

<b>Description</b>	Hydroxychloroquine sulfate (HCQ sulfate) is a synthetic antimalarial agent which can also inhibit Toll-like receptor 7/9 (TLR7/9) signaling. Hydroxychloroquine sulfate efficiently inhibits SARS-CoV-2 infection in vitro <sup>[1][2][3]</sup> .		
<b>IC<sub>50</sub> &amp; Target</b>	TLR7	Plasmodium	TLR9
<b>In Vitro</b>	Hydroxychloroquine sulfate is a synthetic antimalarial drug derived from 4-aminoquinoline; it has been used for several decades for the treatment of some rheumatic diseases such as rheumatoid arthritis (RA) <sup>[1]</sup> . Five micromolar Hydroxychloroquine sulfate or chloroquine also has no measurable effect on intracellular pH, although these concentrations can inhibit TLR9 or 7 signaling induced by DNA or RNA ligands <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		
<b>In Vivo</b>	Hydroxychloroquine sulfate is prescribed for the treatment of lupus, and both Hydroxychloroquine sulfate and its analog		

chloroquine inhibit TLR7 and 9 signaling<sup>[2]</sup>.

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

## PROTOCOL

### Animal Administration <sup>[2]</sup>

MRL/lpr mice are dosed orally five times a week with 20 or 60 mg/kg E6446 or 60 mg/kg Hydroxychloroquine sulfate beginning at 5 weeks of age. CB 4564 is administered at 50 mg/kg i.p. every 10 days. A serum sample is taken immediately before the beginning of treatment to monitor changes in autoreactive antibodies. Subsequently, serum samples are collected approximately monthly and analyzed for anti-dsDNA by ELISA after 1:500 dilution. Body weights and urine samples are taken at the same interval, and proteinuria is assessed. Anti-nuclear antibodies (ANA) are assessed using commercially available HEp2 slide kits, with serum diluted to 1:100 in kit buffer. ANA scores are read blinded<sup>[2]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Biotechnol. 2022 Dec;40(12):1834-1844.
- Cell Discov. 2020 Mar 18;6:16.
- Nat Biomed Eng. 2021 Nov 8.
- Nat Commun. 2022 Jun 14;13(1):3419.
- Nat Commun. 2021 Aug 16;12(1):4964.

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## REFERENCES

[1]. Manzo C, et al. Psychomotor Agitation Following Treatment with Hydroxychloroquine. Drug Saf Case Rep. 2017 Dec;4(1):6.

[2]. Lamphier M, et al. Novel small molecule inhibitors of TLR7 and TLR9: mechanism of action and efficacy in vivo. Mol Pharmacol. 2014 Mar;85(3):429-40.

[3]. Yao X, et al. In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Clin Infect Dis. 2020 Mar 9. pii: ciaa237.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA