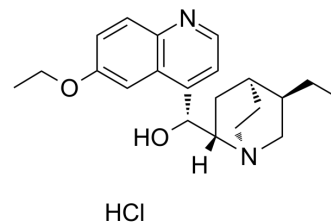


Ethylhydrocupreine hydrochloride

Cat. No.:	HY-136429A
CAS No.:	3413-58-9
Molecular Formula:	C ₂₁ H ₂₉ ClN ₂ O ₂
Molecular Weight:	376.92
Target:	Bacterial; Parasite
Pathway:	Anti-infection
Storage:	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

In Vitro	DMSO : 125 mg/mL (331.64 mM; Need ultrasonic)																					
	H ₂ O : 50 mg/mL (132.65 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>2.6531 mL</td> <td>13.2654 mL</td> <td>26.5308 mL</td> </tr> <tr> <td>5 mM</td> <td>0.5306 mL</td> <td>2.6531 mL</td> <td>5.3062 mL</td> </tr> <tr> <td>10 mM</td> <td>0.2653 mL</td> <td>1.3265 mL</td> <td>2.6531 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	2.6531 mL	13.2654 mL	26.5308 mL	5 mM	0.5306 mL	2.6531 mL	5.3062 mL	10 mM	0.2653 mL	1.3265 mL	2.6531 mL
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Please refer to the solubility information to select the appropriate solvent.																						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: PBS Solubility: 33.33 mg/mL (88.43 mM); Clear solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (5.52 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (5.52 mM); Clear solution 																					

BIOLOGICAL ACTIVITY

Description	Ethylhydrocupreine hydrochloride (Optochin hydrochloride) is a quinine derivate with antimicrobial activity against <i>S. pneumoniae</i> . Ethylhydrocupreine hydrochloride also possesses antimalarial activity against <i>Plasmodium falciparum</i> , with an IC ₅₀ of 25.75 nM. Ethylhydrocupreine hydrochloride is a <i>Gallus gallus</i> taste 2 receptors (ggTas2r1, ggTas2r2 and ggTas2r7) agonist ^{[1][2][3][4]} .
IC₅₀ & Target	<i>S. pneumoniae</i> ^[1] IC ₅₀ : 25.75 nM (<i>Plasmodium falciparum</i>) ^[3]

	ggTas2r1, ggTas2r2 and ggTas2r7 ^[4]
In Vitro	<p>The mutation rate to Ethylhydrocupreine (Optochin) resistance is estimated using fluctuation analysis in three capsulated <i>S. pneumoniae</i> strains (<i>S. pneumoniae</i> D39 NCTC 7466, <i>S. pneumoniae</i> R6 ATCC BAA-255 and <i>S. pneumoniae</i> ATCC 49619). The exposure to subinhibitory concentrations of penicillin increased the mutation rate (expressed as mutation per cell division) to Ethylhydrocupreine (Optochin) resistance between 2.1- and 3.1-fold for all three strains studied^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>The injection of 1 cc. of a 24 hour dextrose blood broth culture of virulent Type I pneumococci into the right pleural cavity of guinea pigs produces acute suppurative pleuritis on both sides associated with suppurative pericarditis. The injection of 1 cc. of 1:500 solutions of Ethylhydrocupreine hydrochloride into each pleural cavity of guinea pigs at varying intervals up to 24 hours after pleural infection has usually shown a marked curative influence. Similar results are observed with dogs^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. J A Kolmer, et al. CHEMOTHERAPEUTIC STUDIES WITH ETHYLHYDROCUPREINE HYDROCHLORIDE IN EXPERIMENTAL PNEUMOCOCCUS PLEURITIS. *J Exp Med.* 1921 May 31;33(6):693-711.
- [2]. Paulo R Cortes, et al. Subinhibitory Concentrations of Penicillin Increase the Mutation Rate to Optochin Resistance in *Streptococcus Pneumoniae*. *J Antimicrob Chemother.* 2008 Nov;62(5):973-7.
- [3]. Nassira Mahmoudi, et al. Identification of New Antimalarial Drugs by Linear Discriminant Analysis and Topological Virtual Screening. *J Antimicrob Chemother.* 2006 Mar;57(3):489-97.
- [4]. Antonella Di Pizio, et al. Molecular Features Underlying Selectivity in Chicken Bitter Taste Receptors. *Front Mol Biosci.* 2018 Jan 31;5:6.

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

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