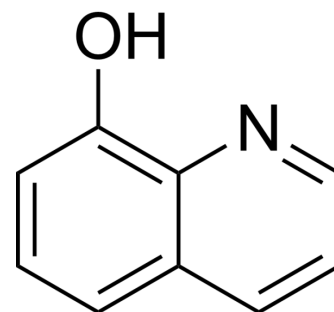


## 8-Hydroxyquinoline

<b>Cat. No.:</b>	HY-B1005	
<b>CAS No.:</b>	148-24-3	
<b>Molecular Formula:</b>	C <sub>9</sub> H <sub>7</sub> NO	
<b>Molecular Weight:</b>	145.16	
<b>Target:</b>	Bacterial; Antibiotic	
<b>Pathway:</b>	Anti-infection	
<b>Storage:</b>	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 2 years -20°C 1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 50 mg/mL (344.45 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	6.8889 mL	34.4447 mL	68.8895 mL
		5 mM	1.3778 mL	6.8889 mL	13.7779 mL
10 mM		0.6889 mL	3.4445 mL	6.8889 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (17.22 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (17.22 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (17.22 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	8-Hydroxyquinoline (8-Quinololinol) is a lipophilic metal chelator that can be used as a fungicide .8-Hydroxyquinoline shows the MIC range of 27.56-55.11 μM (4-8 μg/mL) against the clinical isolates of Neisseria gonorrhoeae. 8-Hydroxyquinoline can bind to copper form complexes and transport copper into cells. 8-Hydroxyquinoline increases in the number of micronucleated polychromatic erythrocytes and can also make hair depigmented in mice <sup>[1][2][3][4][5]</sup> .
<b>In Vitro</b>	8-Hydroxyquinoline (8HQ) (Compd 1) shows cytotoxicity in MRC-5 cells with an IC <sub>50</sub> of 6.27 μM <sup>[1]</sup> . 8-Hydroxyquinoline (8-OHQ) (Compd 1) (mixture of CuCl <sub>2</sub> at 10.0 μM, 1 hour) binds to copper and form complexes can

facilitate transport of copper into human breast cancer DCIS cells<sup>[2]</sup>.

8-Hydroxyquinoline (mixture of CuCl<sub>2</sub> at 1-20 μM; 1 or 8 hour) binds to copper and form complexes induces cell death with a time and dose-dependent manner in DCIS cells<sup>[2]</sup>.

8-Hydroxyquinoline (mixture of CuCl<sub>2</sub> at 1-5 μM, 2-12 hour) inhibits proteasomal chymotrypsin-like activity<sup>[2]</sup>.

8-Hydroxyquinoline (0-100 μM, 30 min) acts to inhibit inflammation through inhibition of NO production and iNOS expression through blockade of C/EBPβ DNA-binding activity and NF-κB activation in Raw 264.7 cells<sup>[3]</sup>.

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

#### Cell Viability Assay<sup>[2]</sup>

Cell Line:	DCIS cells
Concentration:	1,2.5,5,10,20 μM
Incubation Time:	1 or 8 hour
Result:	Binding to copper and form complexes make the cells rounded up and detached, induces cell death with in a concentration- and time-dependent manner. 8-OHQ- and CQ-Cu, but not mixture of their analogues and Cu, could induce cancer cell death in a concentration- and time-dependent manner.

#### Western Blot Analysis<sup>[2]</sup>

Cell Line:	DCIS cells
Concentration:	1,2.5,5 μM
Incubation Time:	0,2,4,8,12 hours
Result:	Mixture of CuCl <sub>2</sub> inhibited the CT-like activity in a concentration- and time-dependent manner. Mixture of CuCl <sub>2</sub> decreased proteasomal activity and increased ubiquitinated proteins and Bax accumulated in a time-dependent manner.

#### RT-PCR<sup>[3]</sup>

Cell Line:	Lipopolysaccharides (HY-D1056)-stimulated Raw 264.7 cells
Concentration:	25,50,75,100 μM
Incubation Time:	30 min
Result:	Inhibited of LPS-induced NO and iNOS expression. Had not affect phosphorylation of MAPKs. Inhibited NF-κB-binding activity and C/EBPβ-binding activity.

#### In Vivo

8-Hydroxyquinoline (HOQ) (25-100 mg/kg, i.p., single dose) results in a significant dose-related increase in the number of micronucleated polychromatic erythrocytes (MPCE) in CD1 mice<sup>[4]</sup>.

8-Hydroxyquinoline (8-HQ) (0.3%, skin administration, 4 times weekly) causes depigmented hair to grow in patterns which change with time in mice<sup>[5]</sup>.

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

Animal Model:	CD1 mice <sup>[4]</sup>
Dosage:	25,50,100 mg/kg
Administration:	Intraperitoneal injection (i.p.)

Result:	Resulted in a significant dose-related increase in the number of micronucleated polychromatic erythrocytes (MPCE) at the 24 h samplingtime for all doses tested.
Animal Model:	C57BL mice <sup>[5]</sup>
Dosage:	0.3% 4 times weekly
Administration:	Skin administration
Result:	Caused depigmented hair to grow in patterns which change with time. Sufficiently frequent applications result in virtually complete depigmentation in young adult C57BL female mice, while single application causes isolated bands of depigmented hair.

## REFERENCES

- [1]. Lawung R, et.al. Repositioning of 8-hydroxyquinoline derivatives as a new promising candidate for combating multidrug resistant *Neisseria gonorrhoeae*. EXCLI J. 2018 Aug 23;17:840-846.
- [2]. 8-hydroxyquinoline and clioquinol requires their capabilities to bind copper and transport copper into cells. J Biol Inorg Chem. 2010 Feb;15(2):259-69.
- [3]. Zhai S, et.al. Tumor cellular proteasome inhibition and growth suppression by
- [4]. Hamoud MA, et.al. Effects of quinoline and 8-hydroxyquinoline on mouse bone marrow erythrocytes as measured by the micronucleus assay. Teratog Carcinog Mutagen. 1989;9(2):111-8.
- [5]. Searle CE. The selective depigmenting action of 8-hydroxyquinoline on hair growth in the mouse. Br J Dermatol. 1972 May;86(5):472-80.

**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

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