Primaquine

Cat. No.: HY-12651A

CAS No.: 90-34-6

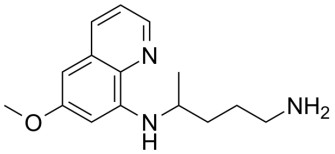
Molecular Formula: $C_{15}H_{21}N_3O$

Molecular Weight: 259.35

Target: Parasite

Pathway: Anti-infection

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (963.95 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.8558 mL	19.2790 mL	38.5579 mL
	5 mM	0.7712 mL	3.8558 mL	7.7116 mL
	10 mM	0.3856 mL	1.9279 mL	3.8558 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2.08 mg/mL (8.02 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Primaquine is a potent antimalaria agent and a potent gametocytocide in falciparum malaria. Primaquine prevents relapse in vivax and ovale malaria[1][2].

IC_{50} & Target

Plasmodium

In Vitro

Primaquine significantly decreases the cell proliferation of live breast cancer cells, and shows no inhibitory effect on the proliferation of MCF-7 (ER^+) and MDA-MB-453 (HER_{2+}) cells. Primaquine inhibits the growth, migration, and colony formation of breast cancer cells in vitro[3].

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

Cell Viability Assay[3]

Cell Line:	MDA-MB-231, HCC1937 cells, MCF-7, and MDA-MB-453 cells
Concentration:	5 μM, 10 μM, 20 μM, 40 μM, 80 μM, 100 μM, 120 μM, and 150 μM

Incubation Time:	24 h
Result:	Decreases breast cancer cell viability.

In Vivo

Primaquine (5-25 mg/kg; p.o; daily; for 3 days) demonstrates no bioluminescence liver signal and no blood stage parasitaemia[2].

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Animal Model:	Male 6-week-old C57BL/6 albino mice with sporozoite inoculation[2]
Dosage:	5 mg/kg, 10 mg/kg, 15 mg/kg, 20 mg/kg, and 25 mg/kg
Administration:	p.o; daily; for 3 days
Result:	No blood stage parasitaemia was observed.

CUSTOMER VALIDATION

- Advanced Therapeutics. 05 October 2021.
- Ann Transl Med. 2021 Feb;9(3):194.

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REFERENCES

[1]. Ashley EA, et al. Primaquine: the risks and the benefits. Malar J. 2014 Nov 3;13:418.

[2]. Qigui Li, et al. Assessment of the prophylactic activity and pharmacokinetic profile of oral tafenoquine compared to primaquine for inhibition of liver stage malaria infections. Malar J. 2014 Apr 14:13:141.

[3]. Ji-Hyang Kim, et al. Primaquine Inhibits the Endosomal Trafficking and Nuclear Localization of EGFR and Induces the Apoptosis of Breast Cancer Cells by Nuclear EGFR/Stat3-Mediated c-Myc Downregulation. Int J Mol Sci. 2021 Nov 30;22(23):12961.

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