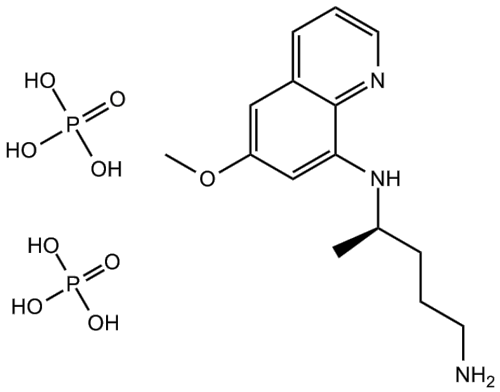
Product Data Sheet

Product Name: Primaquine Diphosphate
Cat. No.: GC17770

Chemical Properties

Cas. No.	63-45-6		
Chemical Name	4-N-(6-methoxyquinolin-8-yl)pentane-1,4-diamine;phosphoric acid		
SMILES	CC(CCCN)NC1=C2C(=CC(=C1)OC)C=CC=N2.OP(=O)(O)O.OP(=O)(O)O		
Formula	$C_{15}H_{21}N_3O.2H_3O_4P$	M.Wt	455.34
Solubility	≥ 18.85mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

IC50: Not available.

Primaquine, an 8-aminoquinoline, is introduced as a curative antimalarial agent in 1950. Since then, the drug has been applied extensively to against the exoerythrocytic stage of malaria. It is demonstrated tthat primaquine, by binding to nucleic acids, could therefore block protein synthesis, alter lipid synthesis and interact with biological membranes. [1]

Caution: Product has not been fully validated for medical applications. For research use only.
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In vitro: Chicken embryo cells (CEC) model were adopted to investigate the effect of primaquine on Newcastle disease virus replication. It was found that Virus-induced hemadsorption was inhibited by primaquine in a dose-dependent manner and was completely suppressed by primaquine 250 g/ml. viral ribonucleic acid (RNA) synthesis was found to be suppressed when primaquine was added early in the virus replication cycle. Whereas, when the drug was added late in the cycle, RNA synthesis was stimulation. [1]

In vivo: Primaquine liposomes were labelled by 99mTc and injected intravenously to Swiss Albino mice. After injection, the major accumulation organ of liposomes was liver followed by spleen, pancreas, lungs and the others. Findings also suggested that Primaquine could block the eradication of the parasites and prevent relapse by destruction of the exoerythrocytic liver stages. [2]

Clinical trial: In a double-blind, randomized and placebo-controlled clinical trial, subjects were administered with chloroquine plus two primaquine diphosphate tablets (30 mg) daily or matching placebos in a two-to-one allocation. Chloroquine/primaquine treatment showed remarkable protective efficacy for a group of 100 subjects. Compared with that for the placebo treatment group of 51 subjects, chloroquine/primaquine exhibited inhibitory effect to 88% of all types malaria, 89% of P. falciparum malaria and 88% of P. vivax malaria. [3]

References:
[1]Burdick JR and Durand DP. Primaquine diphosphate: inhibition of newcastle disease virus replication. Antimicrob Agents Ch. 1974 Oct 15; 6(4): 460-4.
[2]Aricat B, Ozert AY, Ercans MT And Hincalt AA. Characterization, in vitro and in vivo studies on primaquine diphosphate liposomes. J. Microencapsulation. 1995; 12(5): 469-85.
[3]Soto J, Toledo J, Rodriquez M, Sanchez J, Herrera R, Padilla J and Berman J. Double-blind, randomized, placebo-controlled assessment of chloroquine/primaquine prophylaxis for malaria in nonimmune colombian soldiers. Clin Infect Dis. 1999 Jul; 29: 199-201.

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