

## Proguanil

## Chemical Properties

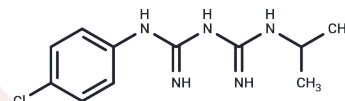
CAS No. : 500-92-5

Formula: C<sub>11</sub>H<sub>16</sub>ClN<sub>5</sub>

Molecular Weight: 253.73

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Proguanil (Chloroguanide) is a prophylactic antimalarial drug that acts primarily through its active metabolite, Cycloguanil, which inhibits the dihydrofolate reductase (DHFR) enzyme of Plasmodium falciparum, preventing the synthesis of purines and pyrimidines and inhibiting the growth and reproduction of the parasite.
Targets(IC50)	Antifolate, Parasite, DNA/RNA Synthesis
In vivo	Proguanil (2.9 mg/kg, orally, once daily) treatment of Wistar albino rats showed mild degenerative changes at day 5 and severe degenerative changes within 6 weeks, and resulted in a significant decrease in serum testosterone levels in the rats. [4]

## Solubility Information

Solubility	Ethanol: 40 mg/mL (157.65 mM), Sonication is recommended. DMSO: 120 mg/mL (472.94 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (15.76 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.9412 mL	19.706 mL	39.412 mL
5 mM	0.7882 mL	3.9412 mL	7.8824 mL
10 mM	0.3941 mL	1.9706 mL	3.9412 mL
50 mM	0.0788 mL	0.3941 mL	0.7882 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Pudney M, et al. Atovaquone and proguanil hydrochloride: a review of nonclinical studies. *J Travel Med.* 1999 May; 6 Suppl 1:S8-12

Srivastava IK, et al. A mechanism for the synergistic antimalarial action of atovaquone and proguanil. *Antimicrob Agents Chemother.* 1999 Jun;43(6):1334-9.

Stephen AO, et al. Prolonged administration of proguanil induces reproductive toxicity in male rats. *J Toxicol Sci.* 2011 Oct;36(5):587-99.

Lochner M, et al. The antimalarial drug proguanil is an antagonist at 5-HT<sub>3</sub> receptors. *J Pharmacol Exp Ther.* 2014 Dec;351(3):674-84.

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