

Certificate of Analysis

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Product Name: Chloroquine diphosphate

Catalog No.: 4109

Batch No.: 3

CAS Number: 50-63-5

EC Number: 200-055-2

IUPAC Name: *N*⁴-(7-Chloro-4-quinolinyl)-*N*¹,*N*¹-dimethyl-1,4-pentanediamine diphosphate salt

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₈H₂₆ClN₃·2H₃PO₄.

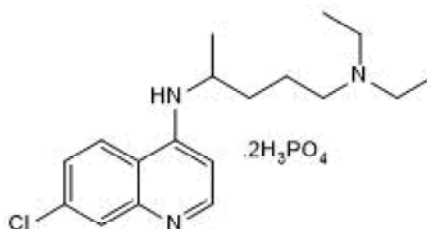
Batch Molecular Weight: 515.86

Physical Appearance: White solid

Solubility: water to 100 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.7% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

| | Carbon Hydrogen Nitrogen | | |
|-------------|--------------------------|------|------|
| Theoretical | 41.91 | 6.25 | 8.15 |
| Found | 41.66 | 6.36 | 8.12 |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: *N*⁴-(7-Chloro-4-quinolinyl)-*N*¹,*N*¹-dimethyl-1,4-pentanediamine diphosphate salt

Description:

Antimalarial drug. Inhibits cell growth and induces cell death in numerous cancer cell lines; inhibits cell proliferation and viability and induces apoptosis in 4T1 mouse breast cancer cells *in vitro*. Exhibits antimetastatic activity. Also inhibits autophagy via a mechanism distinct from that of 3-methyladenine (Cat. No. 3977). Blocks receptor-mediated endocytosis of mannose-glycoconjugates by macrophages. Inhibits SARS-CoV-2 infection *in vitro* (EC_{50} = 1.13 μ M). Tocris products are for biomedical research use only. They are not intended for human or veterinary use.

Physical and Chemical Properties:

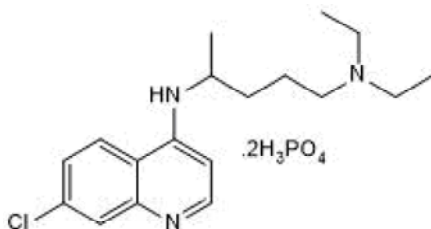
Batch Molecular Formula: C₁₈H₂₆ClN₃·2H₃PO₄.

Batch Molecular Weight: 515.86

Physical Appearance: White solid

Minimum Purity: ≥99%

Batch Molecular Structure:



References:

Wang *et al* (2020) Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) *in vitro*. *Cell Research* **30**.

Jiang *et al* (2010) Antitumor and antimetastatic activities of chloroquine diphosphate in a murine model of breast cancer. *Biomed.Pharmacother.* **64** 609. PMID: 20888174.

Sasaki *et al* (2010) Chloroquine potentiates the anti-cancer effect of 5-fluorouracil on colon cancer cells. *BMC Cancer* **10** 370. PMID: 20630104.

Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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