Chloroquine (phosphate)

**Item No. 14194**

**CAS Registry No.:** 50-63-5  
**Formal Name:** N⁴-(7-chloro-4-quinolinyl)-N¹,N¹-diethyl-1,4-pentanediamine, diphosphate  
**Synonyms:** DL-Chloroquine, NSC 14050  
**MF:** C₁₈H₂₆ClN₃•2H₃PO₄  
**FW:** 515.9  
**Purity:** ≥95%  
**UV/Vis.:** λ_{max} = 221, 235, 256, 329, 342 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years

*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

**Laboratory Procedures**

Chloroquine (phosphate) is supplied as a crystalline solid. Aqueous solutions of chloroquine (phosphate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of chloroquine (phosphate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

**Description**

Chloroquine is an aminoquinoline that is an inhibitor of autophagy and has antimalarial, anti-inflammatory, anticancer, and antiviral activities. Chloroquine inhibits autophagosome-lysosome fusion in HeLa cells when used at a concentration of 100 µM. It is active against the chloroquine-sensitive GC03 strain of *P. falciparum* (IC₅₀ = 29.2 nM) but has decreased activity against mutant pfcr P. falciparum (IC₅₀₅ = 100-150 nM). Chloroquine prevents infection by severe acute respiratory coronavirus 2 (SARS-CoV-2) in Vero cells (EC₅₀ = 1.13 µM) but does not inhibit SARS-CoV replication in the lungs in a mouse model of SARS-CoV infection. It inhibits the growth of human SSC25 and CAL 27 oral squamous cell carcinoma cells (IC₅₀ = 29.9 and 17.3 µM, respectively), as well as A498, SN12C, RXF 393, and 769-P renal cancer cells (IC₅₀ = 16, 62, 81, and 25 µM, respectively). It reduces tumor growth in a CAL 27 mouse xenograft model and a 4T1 mouse allograft model when administered at a dose of 50 mg/kg. Formulations containing chloroquine have been used in the prevention of malaria, as well as the treatment of rheumatoid arthritis and systemic lupus erythematosus (SLE), and have been associated with cardiotoxicity and myopathy.

**References**