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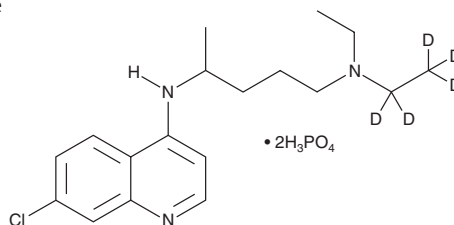
PRODUCT INFORMATION



Chloroquine-d₅ (phosphate)

Item No. 29079

CAS Registry No.: 1854126-42-3
Formal Name: N⁴-(7-chloroquinolin-4-yl)-N¹-ethyl-N¹-(ethyl-d₅)pentane-1,4-diamine, diphosphate
Synonym: DL-Chloroquine-d₅
MF: C₁₈H₂₁ClD₅N₃ • 2H₃O₄P
FW: 520.9
Chemical Purity: ≥98% (Chloroquine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀
UV/Vis.: λ_{max}: 221, 236, 257, 330, 343 nm
Supplied as: A 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-d₅ (phosphate) is intended for use as an internal standard for the quantification of chloroquine (Item No. 14194) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Chloroquine-d₅ (phosphate) is supplied as a solid. Aqueous solutions of chloroquine-d₅ (phosphate) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of chloroquine-d₅ (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.¹⁻⁵ Chloroquine inhibits autophagosome-lysosome fusion in HeLa cells when used at a concentration of 100 μM.¹ 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* (IC₅₀s = 100-150 nM).³ 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.^{5,6} It inhibits the growth of human SSC25 and CAL 27 oral squamous cell carcinoma cells (IC₅₀s = 29.9 and 17.3 μM, respectively), as well as A498, SN12C, RXF 393, and 769-P renal cancer cells (IC₅₀s = 16, 62, 81, and 25 μM, respectively).^{4,7} 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.^{4,8} 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.

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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PRODUCT INFORMATION



References

1. Mauthe, M., Orhon, I., Rocchi, C., *et al.* Chloroquine inhibits autophagic flux by decreasing autophagosome-lysosome fusion. *Autophagy* **14**(8), 1435-1455 (2018).
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7. Grimaldi, A., Santini, D., Zappavigna, S., *et al.* Antagonistic effects of chloroquine on autophagy occurrence potentiate the anticancer effects of everolimus on renal cancer cells. *Cancer Biol. Ther.* **16**(4), 567-579 (2015).
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