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Hydroxychloroquine Sulfate

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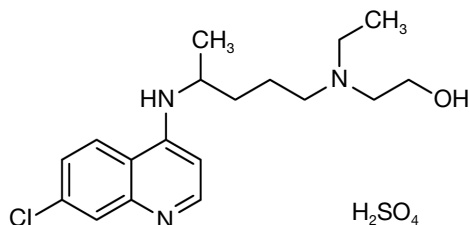
50 mg

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New 04/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Background: Hydroxychloroquine Sulfate is a 4-aminoquinoline derivative of quinine known to sensitize cells to apoptosis (1,2). This small compound is an anti-malaria drug that has been found to be an effective treatment of rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), and other rheumatic diseases (3). Current studies exhibit the diverse immunomodulatory effects that Hydroxychloroquine Sulfate can span, including metabolic, cardiovascular, antithrombotic, antineoplastic, and anti-infectious agent modulation. Prospective modes of action include inhibition of lysosome and autophagosome functions, subsequent immune activation, and interference of cytokine production via its ability to inhibit TLR binding and processing (4). Studies have shown that Hydroxychloroquine Sulfate inhibits IFN- β production ($IC_{50} = 25 \mu\text{M}$) by disrupting the cGAS/dsDNA complex (5). Hydroxychloroquine Sulfate can inhibit SARS-CoV-2 infection *in vitro* and the antiviral and anti-inflammatory effects of this compound make it important when studying different viral diseases (6).

Molecular Formula: $\text{C}_{18}\text{H}_{26}\text{ClN}_3\text{O} \cdot \text{H}_2\text{SO}_4$ **Molecular Weight:** 434.0 g/mol**Purity:** >98%**CAS:** 747-36-4**Solubility:** Soluble in water at 40 mg/ml.

Storage: Store lyophilized at room temperature, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use: Hydroxychloroquine Sulfate is supplied as a lyophilized powder. For a 10 mM stock, reconstitute 5 mg of powder in 1.15 ml of water. Working concentrations and length of treatment can vary depending on the desired effect.

Background References:

- (1) Kim, W.U. et al. (2006) *Clin Exp Immunol* 144, 503-11.
- (2) Kalia, S. and Dutz, J.P. *Dermatol Ther* 20, 160-74.
- (3) Olsen, N.J. et al. (2013) *Semin Arthritis Rheum* 43, 264-72.
- (4) Schrezenmeier, E. and Dörner, T. (2020) *Nat Rev Rheumatol* 16, 155-66.
- (5) An, J. et al. (2015) *J Immunol* 194, 4089-93.
- (6) Liu, J. et al. (2020) *Cell Discov* 6, 16.

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.