

Hydroxychloroquine Sulfate

50 mg

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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 μ 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

 $C_{18}H_{26}ClN_3O \cdot H_2SO_4$

Molecular Weight

434 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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