



## Product Information

### Chloroquine diphosphate salt

Product Number **C 6628**

Store at Room Temperature RT

#### Product Description

Molecular Formula:  $C_{18}H_{26}ClN_3 \cdot 2H_3PO_4$

Molecular Weight: 515.9

CAS Number: 50-63-5

Melting point: 193 °C

Extinction coefficient:  $E^{1\%}_{1\text{cm}} = 15$  (257 nm), 16.6 (329 nm), 18.9 (343 nm)(0.01 M HCl)<sup>1</sup>

$pK_a$ : 8.4 and 10.8 (for chloroquine base at 20 °C)<sup>2</sup>

This product is a member of the quinoline family with multiple applications. It was originally used as an antimalarial compound.<sup>3</sup> It kills the erythrocytic forms of malaria parasites at all stages of development, but does not affect the sporozoites.

This compound is also an antibiotic.<sup>4,5</sup> It can be used at 200 mg/ml (PBS, pH 5.0) to dissociate antigen-antibody complexes without denaturing red blood cell antigens.<sup>6</sup>

A more recent usage is for DNA transfection.<sup>7,8</sup> When used at 100  $\mu$ M, it intercalates into DNA, increasing transfection efficiency.<sup>9</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in water (50 mg/ml). A 10% solution in water has a pH of 3.5-4.5. A 7.15% solution in water is iso-osmotic with serum. It is practically insoluble in alcohol, chloroform or ether.<sup>3</sup>

#### Storage/Stability

Solutions can be sterilized by autoclaving or by filtration through a 0.2  $\mu$ m membrane. Solutions of pH 4-6 are stable when heated, but are sensitive to light.<sup>3</sup>

#### References

1. British Pharmacopoeia, H.M.S.O. (London, GB: 1980), p. 103.
2. Clarke's Isolation and Identification of Drugs, Moffat, A. C., et al., eds, The Pharmaceutical Press (London, GB: 1986), p. 453.
3. Martindale The Extra Pharmacopoeia, 29th ed., Reynolds, J. E. F., ed., The Pharmaceutical Press (London, England: 1989), p. 508.
4. The Merck Index, 11th ed., Entry# 2163.
5. Anal. Prof. Drug Sub., **5**, 61 (1976).
6. Edwards, J. M., et al., Chloroquine Dissociation of Antigen-antibody Complexes. A New Technique for Typing Red Blood Cells With a Positive Direct Antiglobulin Test. *Transfusion*, **22(1)**, 59-61 (1982).
7. Krajewski, W.A., Effect of In Vivo Histone Hyperacetylation on the State of Chromatin Fibers. *J. Biomol. Struct. Dyn.*, **16(5)**, 1097-1106 (1999).
8. Luthman, H., and Magnusson, G., High Efficiency Polyoma DNA Transfection of Chloroquine Treated Cells. *Nucleic Acids Res.*, **11(5)**, 1295-1308 (1983).
9. Boros, P., et al., IgM anti-Fc Gamma R Autoantibodies Trigger Neutrophil Degranulation. *J. Exp. Med.*, **173(6)**, 1473-1482 (1991).

CMH/RXR 11/02

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.