

Chloroquine

An inhibitor of endosomal acidification

Catalog # tlr-chq

For research use only

Version # 09E27-MM

PRODUCT INFORMATION

Content:

• 250 mg Chloroquine (diphosphate salt)

Storage and stability:

- Chloroquine is shipped at room temperature. Store at room temperature. Protect from light.
- Upon resuspension, chloroquine should be stored at 4°C.
- Product as powder form is stable 6 months at room temperature. Reconstituted product is stable 1 month at 4°C.

DESCRIPTION

Chloroquine is a lysosomotropic agent that prevents endosomal acidification¹. It accumulates inside the acidic parts of the cell, including endosomes and lysosomes. This accumulation leads to inhibition of lysosomal enzymes that require an acidic pH, and prevents fusion of endosomes and lysosomes. Chloroquine is commonly used to study the role of endosomal acidification in cellular processes, such as the signaling of intracellular TLRs^{2,3}.

CHEMICAL PROPERTIES

CAS number: 50-63-5

Synonym: N4-(7-Chloro-4-quinoliny)-N1,N1-dimethyl-1,4-pentanediamine diphosphate salt

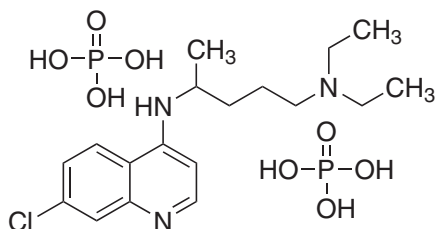
Formula: C₁₈H₂₆ClN₃, 2H₃PO₄

Molecular weight: 515.86

Solubility: Water (50 mg/ml)

Appearance: White to faint yellow

Purity: >96 %



METHODS

Preparation of stock solution (100 mM)

Inhibition of endosomal acidification can be achieved with 10-100 μM Chloroquine.

- Add 4.8 ml water and vortex for 30 seconds or until complete solubilization.
- Filter sterilize and store at 4°C.

Inhibition of TLR signaling by chloroquine

- Pre-treat TLR-expressing cells, such as macrophages or HEK293 cells transfected with 10-100 μM chloroquine for 30 min before stimulation with appropriate TLR ligands
- Stimulate cells with the appropriate TLR ligand for 1 to 6 hours.
- Determine the inhibitory effect of chloroquine on TLR signaling by assessing reporter gene expression using the appropriate detection system.

References

1. Steinman RM. *et al.*, 1983. Endocytosis and the recycling of plasma membrane. *J. Cell. Biol.* 96:1-27.
2. Rutz, M. *et al.*, 2004. Toll-like receptor 9 binds single-stranded CpG-DNA in a sequence- and pH-dependent manner. *Eur. J. Immunol.* 34:2541-2550.
3. Hart OM. *et al.*, 2005. TLR7/8-Mediated Activation of Human NK Cells Results in Accessory Cell-Dependent IFN-γ Production. *J. Immunol.*, 175: 1636 - 1642.

RELATED PRODUCTS

Product	Catalog Code
pNiFty-SEAP (Amp)	pnifty-seap
pNiFty-Luc (Amp)	pnifty-luc
pUNO-hTLR3	puno-htlr3
pUNO-mTLR3	puno-mtlr3
poly(I:C)	tlrl-pic
pUNO-hTLR7	puno-htlr7
pUNO-mTLR7	puno-mtlr7
Gardiquimod	tlrl-gdq
pUNO-hTLR9	puno-htlr9a
pUNO-mTLR9	puno-mtlr9
ODN 2006	tlrl-hodnb

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