

# Chloroquine

An inhibitor of endosomal acidification

Catalog # tlr1-chq

For research use only

Version # 16F01-MM

## PRODUCT INFORMATION

### Content

- 250 mg Chloroquine (diphosphate salt)

### Storage and stability

- Chloroquine is shipped at room temperature. Store at room temperature (15-25 °C). Protect from light. Product in powder form is stable for 6 months at room temperature when properly stored.
- Upon resuspension, chloroquine should be stored at 4 °C. Reconstituted product is stable for 1 month at 4 °C.

### Quality control

- Purity: ≥98% (UHPLC)
- The absence of bacterial contamination (e.g. lipoproteins & endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

Chloroquine is a lysosomotropic agent that prevents endosomal acidification<sup>1</sup>. 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<sup>2,3</sup>.

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.* 34:2541-50.
3. Hart OM. *et al.*, 2005. TLR7/8-Mediated Activation of Human NK Cells Results in Accessory Cell-Dependent IFN- $\gamma$  Production. *J. Immunol.* 175:1636-42.

## CHEMICAL PROPERTIES

**CAS number:** 50-63-5

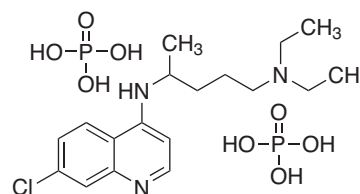
**Synonym:** N4-(7-Chloro-4-quinolinyl)-N1,N1-dimethyl-1,4-pentane diamine diphosphate salt

**Formula:** C<sub>18</sub>H<sub>26</sub>ClN<sub>3</sub> • 2H<sub>3</sub>PO<sub>4</sub>

**Molecular weight:** 515.86

**Solubility:** 50 mg/ml in water

### Structure:



## METHOD

### Preparation of stock solution (100 mM)

Inhibition of endosomal acidification can be achieved with 10-100  $\mu$ M chloroquine.

- Add 4.8 ml water and vortex until completely dissolved.
- Filter sterilize and store at 4 °C.

### Inhibition of TLR signaling

- Add 10-100  $\mu$ M of chloroquine to TLR-expressing cells, such as macrophages or HEK293 cells transfected with TLR genes.
- Incubate for 30 min at 37 °C.
- 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.

## RELATED PRODUCTS

Product	Catalog Code
pUNO1-hTLR3	puno1-htlr3
poly(I:C)	tlr1-pic
pUNO1-hTLR7	puno1-htlr7
Gardiquimod	tlr1-gdq
pUNO1-hTLR9	puno1-htlr9a
ODN 2006(ODN 7909)	tlr1-2006

### TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Hong Kong: +852 3-622-34-80

E-mail: info@invivogen.com