

Product Name:	Levofloxacin HCl
Product Number:	L048
CAS Number:	177325-13-2
Molecular Formula:	$C_{18}H_{20}FN_3O_4 \cdot HCl$
Form:	Powder
Appearance:	Off-white to light yellow crystalline powder
Solubility:	Water: freely soluble, Methanol: sparingly soluble, Ethanol: slightly soluble, Diethyl or petroleum ether: Insoluble
pH:	3.5 - 5.0
Optical Rotation:	-47° to -52°
Description:	Levofloxacin HCl is the hydrochloride salt of Levofloxacin. It is a broad-spectrum fluoroquinolone antibiotic and the optical S-(-) isomer of Ofloxacin. The compound is a DNA gyrase inhibitor, and has been shown to inhibit topoisomerase IV. Levofloxacin is freely soluble in water.
Mechanism of Action:	Fluoroquinolone antibiotics target bacterial DNA gyrase (specifically type II topoisomerase) an enzyme which reduces DNA strain during replication. Because DNA gyrase is required during DNA replication, subsequent DNA synthesis and ultimately cell division is inhibited. It has also been shown to inhibit topoisomerase IV.
Spectrum:	Levofloxacin is a broad-spectrum antibiotic targeting most aerobic Gram-positive and Gram-negative bacteria. It is moderately active against anaerobes. It has shown to be effective for <i>Mycoplasma</i> . Levofloxacin is effective against pathogens causing pneumonia such as <i>Streptococcus pneumoniae</i> , and <i>Haemophilus influenzae</i> .
Microbiology Applications	<p>Levofloxacin HCl is commonly used in clinical <i>in vitro</i> microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive and gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options. Representative MIC values include:</p> <ul style="list-style-type: none"> ◊ <i>Haemophilus influenzae</i> 0.00625 µg/mL – 1 µg/mL ◊ <i>Streptococcus pneumoniae</i> 0.05 µg/mL - 4 µg/mL ◊ For a complete list of Levofloxacin MIC values, click here.

References:

Bebear CM, Renaudin H, Bryskier A, Bebear C (2000) Comparative activities of telithromycin (HMR 3647), levofloxacin, and other Antimicrobial Agents against human *Mycoplasmas*. Antimicrob. Agents and Chemother. 44 (7) 1980-1982 PMID 10858366

Davis R and Bryson HM (1994) Levofloxacin. A review of its antibacterial activity, pharmacokinetics and therapeutic efficacy. Drugs. 47(4):677-700 PMID 7516863

Wolfson JS and Hooper DC (1985) The fluoroquinolones: Structures, mechanisms of action and resistance, and spectra of activity *in vitro*. Antimicrob. Agents Chemother. 28(4):581-586 PMID 3000292

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