Ofloxacin Hydrochloride
PRODUCT DATA SHEET

issue date 01/06/2020

Product Name:	Ofloxacin Hydrochloride
Product Number:	O039
CAS Number:	118120-51-7
Molecular Formula:	$C_{18}H_{20}FN_3O_4$ • HCl
Molecular Weight:	397.83
Form:	Powder
Appearance:	Off-white crystalline powder
Solubility:	Sparingly soluble in water
Source:	Synthetic
Storage Conditions:	2-8C
Description:	Ofloxacin HCl is a synthetic, broad-spectrum, second-generation fluoroquinolone antibiotic. It is an analog of nalidixic acid. Ofloxacin HCl inhibits the supercoiling activity of bacterial DNA gyrase, halting DNA replication. Ofloaxacin was developed by Daiichi Seiyaku.
Mechanism of Action:	Ofloxacin HCl is a Cytochrome P-450 inhibitor, a DNA Topoisomerase II inhibitor. Fluoroquinolone antibiotics target bacterial DNA gyrase, 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.
Spectrum:	Ofloxacin is a broad-spectrum antibiotic targeting a wide range of Gram-positive and Gram-negative organisms.
Microbiology Applications	Ofloxacin is commonly used in clinical in vitro 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: Haemophilus influenzae 0.016 µg/mL – 0.063 µg/mL Escherichia coli 0.063 µg/mL – 0.125 µg/mL For a complete list of Ofloxacin MIC values, click here.
Cancer Applications	Oflaxacin had an inhibitory effect on the proliferation of transitional cell carcinoma cell lines at high concentrations (>200 µg/ml). The effect may be related to impairment of telomerase activity by some unknown mechanism (Yamakuchi M et al, 1997). Ofloxacin inhibite proliferation and DNA synthesis of these 3 human TCC lines (CCSUP, T24, and J82) in vitro. Inhibition occurred in a concentration- and time-dependent manner. Inhibition of proliferation and DNA synthesis were assessed via MTT and tritiated thymidine assays.

References:

Mouton Y and Leroy O (1991) Ofloxacin. Int. J. Antimicrob. Agents 1(2-3):57-74 Seay TM, Peretsman SJ and DIxon PS (1996) Inhibition of human transitional cell carcinoma in vitro proliferation by fluoroquinolone antibiotics. J. Urol. 2:757-762 PMID 8558720 Smith JT (1991) Ofloxacin, a bactericidal antibacterial. Chemother. 37 (supp 1):2-13 PMID 1646700 Yamakuchi M, Nakata M, Kawahara K, Kawahara K, Kitajima I and Maruyama I (1997) New quinolones, ofloxacin and levofloxacin, inhibit telomerase activity in transitional cell carcinoma cell lines. Cancer Lett. 119(2):213-219 PMID 9570374