



Moxifloxacin Hydrochloride

PRODUCT DATA SHEET

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Product Name:	Moxifloxacin Hydrochloride
Product Number:	M033
CAS Number:	186826-86-8
Molecular Formula:	$C_{21}H_{24}FN_3O_4 \cdot HCl$
Molecular Weight:	437.90
Form:	Powder
Appearance:	Yellow powder
Solubility:	sparingly soluble in aqueous solution.
Source:	Synthetic
Water Content (Karl Fischer):	$\leq 4.5\%$
pH:	3.9-4.6
Storage Conditions:	2-8°C
Description:	<p>Moxifloxacin Hydrochloride is a broad-spectrum fourth-generation fluoroquinolone antibiotic that can be used against the bacteria causing respiratory infections. Moxifloxacin Hydrochloride is sparingly soluble in aqueous solution.</p>
Mechanism of Action:	<p>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.</p> <p>Moxifloxacin is bactericidal against wild-type and first-step gyrase- and topoisomerase IV-resistant mutants. The 8-methoxy group on moxifloxacin appeared to significantly lower the propensity for quinolone resistance development (Dalhoff, 2011).</p>
Spectrum:	<p>Moxifloxacin is a broad-spectrum antibiotic commonly used Gram-positive and Gram-negative bacteria. It is effective against bacteria that cause respiratory infections including <i>S. pneumonia</i>. It is also effective for obligate anaerobes including <i>Bacteriodes</i>, <i>Fusobacterium</i>, <i>Bilophila</i>, and <i>Clostridium</i>.</p>

Microbiology Applications Moxifloxacin Hydrochloride 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 for infected patients. Representative MIC values include:

- *Haemophilus influenzae* 0.008 µg/mL – 0.25 µg/mL
- *Streptococcus pneumoniae* 0.03 µg/mL - 8 µg/mL
- For a complete list of moxifloxacin values, [click here](#).

References:

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Wolfson JS and Hooper DC (1985) The Fluoroquinolones: Structures, mechanisms of action and resistance, and spectra of activity *in vitro*. 28:581-86

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