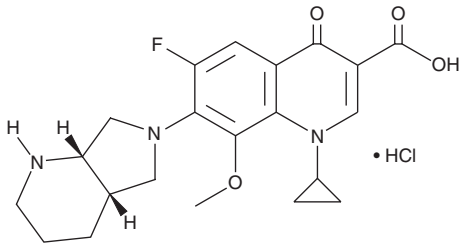
PRODUCT INFORMATION

Moxifloxacin (hydrochloride)

Item No. 14830

CAS Registry No.: 186826-86-8
Formal Name: 1-cyclopropyl-6-fluoro-1,4-dihydro-8-methoxy-7-[(4aS,7aS)-octahydro-6H-pyrrolo[3,4-b]pyridin-6-yl]-4-oxo-3-quinolinecarboxylic acid, monohydrochloride
Synonym: BAY 12-8039
MF: $C_{21}H_{24}FN_3O_4$ • HCl
FW: 437.9
Purity: ≥95%
UV/Vis.: λ_{max}: 215, 295, 329 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Moxifloxacin (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the moxifloxacin (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Moxifloxacin (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of moxifloxacin (hydrochloride) in these solvents is approximately 10 and 3.33 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of moxifloxacin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of moxifloxacin (hydrochloride) in PBS (pH 7.2) is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Moxifloxacin is a fluoroquinolone antibiotic.[1] It is active against 390 clinical isolates of aerobic and anaerobic Gram-positive and Gram-negative bacteria (MIC_{90}s = ≤0.25 µg/ml), as well as clinical isolates of methicillin-susceptible and -resistant *S. aureus* (MIC_{90}s = 0.12 and 2 µg/ml, respectively).[1,2] Moxifloxacin is an inhibitor of *E. coli* DNA gyrase that is selective for DNA gyrase over *E. coli* topoisomerase IV (IC_{50}s = 0.51 and 38.8 mg/L, respectively, in cell-free assays).[3] It prevents *S. aureus*- or *P. aeruginosa*-induced increases in bronchoalveolar lavage fluid (BALF) neutrophil infiltration and reduces *S. aureus*- or *P. aeruginosa*-induced increases in lung chemokine (C-X-C motif) ligand 1 (CXCL1) and IL-1β levels in mouse models of bacterial pneumonia when administered at a dose of 100 mg/kg twice per day for two days.[4] Moxifloxacin (100 mg/kg) decreases the number of lung and spleen colony forming units (CFUs) in a mouse model of systemic *M. tuberculosis* infection.[5] Formulations containing moxifloxacin have been used in the treatment of various bacterial infections.

References

1. Woodcock, J.M., Andrews, J.M., Boswell, F.J., *et al. Antimicrob. Agents Chemother.* **41(1)**, 101-106 (1997).
2. Goldstein, E.J., Citron, D.M., Hudspeth, M., *et al. Antimicrob. Agents Chemother.* **41(7)**, 1552-1557 (1997).
3. Schedletzky, H., Wiedemann, B., and Heisig, P. *J. Antimicrob. Chemother.* **43(Suppl B)**, 31-37 (1999).
4. Beisswenger, C., Honecker, A., Kamyschnikow, A., *et al. Respir. Res.* **15:82** (2014).
5. Miyazaki, E., Miyazaki, M., Chen, J.M., *et al. Antimicrob. Agents Chemother.* **43(1)**, 85-89 (1999).

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