Moxifloxacin Hydrochloride

Cat. No.: HY-66011

CAS No.: 186826-86-8

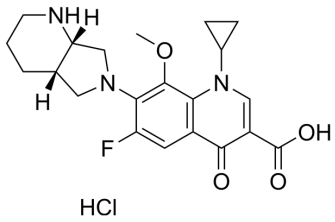
Molecular Formula: $C_{21}H_{25}ClFN_3O_4$

Molecular Weight: 437.89

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (57.09 mM; Need ultrasonic)
H_2O : 16.67 mg/mL (38.07 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2837 mL	11.4184 mL	22.8368 mL
5 mM	0.4567 mL	2.2837 mL	4.5674 mL
10 mM	0.2284 mL	1.1418 mL	2.2837 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 4 mg/mL (9.13 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.71 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Moxifloxacin Hydrochloride (BAY 12-8039) is an oral 8-methoxyquinolone antimicrobial for use in the treatment of acute bacterial sinusitis, acute bacterial exacerbations of chronic bronchitis, and community-acquired pneumonia[1][2].

IC_{50} & Target

Quinolone

In Vitro

The in vitro activities of Moxifloxacin Hydrochloride (BAY 12-8039) and Amoxicillin are compared by time-kill curve and inhibition of intracellular growth experiments by using a model of bone marrow-derived mouse macrophages infected by L.

monocytogenes EGDe. Moxifloxacin acts much more rapidly, beginning to exert its effects in the first 3 h and achieving complete broth sterilization within 24 h of incubation. Moxifloxacin appears to have a protective effect against macrophage lysis, as many cells are still viable after 24 h of incubation[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Moxifloxacin (BAY 12-8039; 12 mg/kg; intravenous injection; once-three times per day; for 7 days; white male Wistar rats) treatment every 8 hours is accompanied by longer survival. Tissue cultures 30 hours after bacterial challenge shows considerably less bacterial overgrowth in the spleens and lungs of moxifloxacin-treated than in salinetreated animals and without being toxic[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	144 white male Wistar rats (18-22 weeks; 300-400 g) infected Stenotrophomonas maltophilia[4]
Dosage:	12 mg/kg
Administration:	Intravenous injection; once per day, twice per day, three times per day; for 7 days
Result:	Showed considerably less bacterial overgrowth in the spleens and lungs and without being toxic.

CUSTOMER VALIDATION

- Nat Microbiol. 2023 Mar;8(3):410-423.
- Nat Commun. 2022 Mar 2;13(1):1116.
- Cell Mol Life Sci. 2022 Jul 22;79(8):441.
- Antibiotics (Basel). 2022, 11(2), 192.
- ACS Chem Biol. 2021 Dec 15.

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REFERENCES

[1]. Culley CM, et al. Moxifloxacin: clinical efficacy and safety. Am J Health Syst Pharm. 2001 Mar 1;58(5):379-88.

[2]. Balfour JA, et al. Moxifloxacin: a review of its clinical potential in the management of community-acquired respiratory tract infections. Drugs. 2000 Jan;59(1):115-39.

[3]. Grayo S, et al. Comparison of the in vitro efficacies of moxifloxacin and amoxicillin against Listeria monocytogenes. Antimicrob Agents Chemother. 2008 May;52(5):1697-702.

[4]. Ioannidis O, et al. Effect of moxifloxacin on survival, lipid peroxidation and inflammation in immunosuppressed rats with soft tissue infection caused by Stenotrophomonas maltophilia. Microbiol Immunol. 2014 Feb;58(2):96-102.

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