Ofloxacin

Cat. No.: HY-B0125

CAS No.: 82419-36-1

Molecular Formula: $C_{18}H_{20}FN_3O_4$

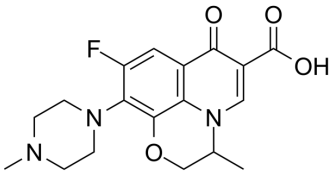
Molecular Weight: 361.37

Target: Bacterial; Antibiotic; Endogenous Metabolite; Orthopoxvirus

Pathway: Anti-infection; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 4 mg/mL (11.07 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7672 mL	13.8362 mL	27.6725 mL
5 mM	0.5534 mL	2.7672 mL	5.5345 mL
10 mM	0.2767 mL	1.3836 mL	2.7672 mL

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

BIOLOGICAL ACTIVITY

Description

Ofloxacin (Hoe-280) is a fluoroquinolone whose primary mechanism of action is inhibition of bacterial DNA gyrase. Ofloxacin shows inhibitory activity against vaccinia virus (VV).

IC_{50} & Target

Quinolone

In Vitro

Ofloxacin (Hoe-280) is a fluoroquinolone whose primary mechanism of action is inhibition of bacterial DNA gyrase. In vitro it has a broad spectrum of activity against aerobic Gram-negative and Gram-positive bacteria, although it is poorly active against anaerobes[1]. Ofloxacin (Hoe-280), like other 4-quinolones, is unusual among front line drugs available to treat bacterial infections since it affects bacterial DNA synthesis, rather than cell wall or protein synthesis[2].

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

In Vivo

Ofloxacin (Hoe-280) (20 mg/kg), norfloxacin (40 mg/kg), pefloxacin mesylate dihydrate (40 mg/kg)and ciprofloxacin (50 mg/kg) are administered by gavage twice daily for three consecutive weeks. 6 weeks after treatment, the test animals are euthanised and Achilles tendon specimens are collected. A computer monitored tensile testing machine was utilised for

biomechanical testing. The mean elastic modulus of the control group was significantly higher than that of the norfloxacin and pefloxacin groups ($p<0.05$ and $p<0.01$, respectively). The mean yield force (YF) of the control group was significantly higher than those of ciprofloxacin, norfloxacin and pefloxacin groups ($p<0.001$, $p<0.05$ and $p<0.01$, respectively). The mean ultimate tensile force (UTF) of the control group was significantly higher than of the ciprofloxacin, norfloxacin, and pefloxacin groups ($p<0.001$, $p<0.05$ and $p<0.01$, respectively). Hyaline degeneration and fibre disarrangement were observed in the tendons of the ciprofloxacin, pefloxacin, and ofloxacin treated-groups, whereas myxomatous degeneration was observed only in the ciprofloxacin and pefloxacin groups[3].

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

CUSTOMER VALIDATION

- Cell Metab. 2022 Feb 7;34(3):424-440.e7.
- Water Res. 2023 May 21, 120110.
- Chemosphere. 2019 Jun;225:378-387.
- Biomed Pharmacother. 2023 Nov 8:115856.
- Microorganisms. 2024 Mar 13, 12(3), 575.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. S Ikeda , et al. Antiviral activity and inhibition of topoisomerase by ofloxacin, a new quinolone derivative. Antiviral Res. 1987 Oct;8(3):103-13.

[2]. Todd PA, et al. Ofloxacin. A reappraisal of its antimicrobial activity, pharmacology and therapeutic use. Drugs. 1991 Nov;42(5):825-76.

[3]. Smith JT, et al. Ofloxacin, a bactericidal antibacterial. Chemotherapy. 1991;37 Suppl 1:2-13.

[4]. Olcay E, et al. Oral toxicity of pefloxacin, norfloxacin, ofloxacin and ciprofloxacin: comparison of biomechanical and histopathological effects on Achilles tendon in rats. J Toxicol Sci. 2011 Jun;36(3):339-45.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA