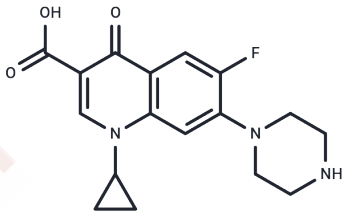
Data Sheet (Cat.No.T1640)

TargetMol

Ciprofloxacin

Chemical Properties



CAS No. : 85721-33-1

Formula: C17H18FN3O3

Molecular Weight: 331.34

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Ciprofloxacin (Bay-09867) mainly targets bacterial DNA Gyrase (IC50=0.22-0.31 μM) and topoisomerase IV (IC50=0.3-1.9 μM). Ciprofloxacin is a highly active fluoroquinolone antibiotic.
Targets(IC50)	Apoptosis,Reactive Oxygen Species,Mitochondrial Metabolism,Antibacterial,Antibiotic, ROS,Topoisomerase
In vitro	**METHODS**: Prostate cancer cells (LNCaP and DU145) were treated with Ciprofloxacin, and the cytotoxicity was detected by lactate dehydrogenase (LDH) release assay. **RESULTS**: Ciprofloxacin showed low cytotoxicity to DU145 cells, with a LDH release rate of 23.3%. The release rate of LDH to LNCaP cells was 22.1%. [1] **METHODS**: Tenocytes were treated with Ciprofloxacin (5-50 μg/mL) for 0-24 hours, and MTT assay was used to detect cell growth inhibition. **RESULTS**: Ciprofloxacin inhibited cell proliferation and induced cell cycle arrest at G2/M phase. [2] **METHODS**: Minimum inhibitory concentrations of Yersinia pestis and Bacillus anthracis were determined after treatment with Ciprofloxacin. **RESULTS**: Ciprofloxacin showed potent activity against Yersinia pestis and Bacillus anthracis with MIC90 of 0.03 μg/mL and 0.12 μg/mL, respectively. [3]
In vivo	**METHODS**: To study the preventive effect of Ciprofloxacin against plague, mice were intraperitoneally injected with Ciprofloxacin (30 mg/kg) for 24 hours. **RESULTS**: Ciprofloxacin could prevent Yersinia pestis in a mouse model of pneumonic plague. [4] **METHODS**: To investigate the effect of Ciprofloxacin on the susceptibility to aortic dissection and rupture in mice, Ciprofloxacin (100 mg/kg) was administered intraperitoneally once daily for 4 weeks. **RESULTS**: Ciprofloxacin accelerated aortic root dilation and increased the incidence of aortic dissection and rupture by decreasing LOX levels and increasing MMP levels and activity in the aortic wall. Ciprofloxacin induces DNA damage and release of DNA into the cytoplasm, mitochondrial dysfunction, and activation of cytoplasmic DNA sensor signals. Ciprofloxacin increased apoptosis and necroptosis in the aortic wall. [5]
Kinase Assay	The in vitro kinase assays is performed by incubating purified kinase (IKKε or TBK1) in kinase buffer containing 25 mM Tris (pH7.5), 10 mM MgCl2, 1 mM DTT, and 10 μM ATP for 30 minutes at 30°C in the presence of 0.5 μCi γ-[32P]-ATP and 1 μg MBP per sample as a substrate. The kinase reaction is stopped by adding 4x sodium dodecyl sulfate (SDS) sample buffer and boiling for 5 minutes at 95°C. Supernatants are resolved by SDS-

Kinase Assay	polyacrylamide gel electrophoresis, transferred to nitrocellulose, and analyzed by autoradiography using a Typhoon 9410 phosphorimager.

Solubility Information

Solubility	H2O: Insoluble, DMSO: 0.33 mg/mL (1 mM),Sonication is recommended. 0.1 M HCl: 55 mg/mL (165.99 mM),Sonication and heating are recommended.The compound is unstable in solution. Please use sonn. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.018 mL	15.0902 mL	30.1805 mL
5 mM	0.6036 mL	3.018 mL	6.0361 mL
10 mM	0.3018 mL	1.509 mL	3.018 mL
50 mM	0.0604 mL	0.3018 mL	0.6036 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Chrzanowska A, et al. The Effect of Fatty Acids on Ciprofloxacin Cytotoxic Activity in Prostate Cancer Cell Lines-Does Lipid Component Enhance Anticancer Ciprofloxacin Potential? Cancers (Basel). 2022 Jan 14;14(2):409.
Tsai WC, et al. Ciprofloxacin-mediated cell proliferation inhibition and G2/M cell cycle arrest in rat tendon cells. Arthritis Rheum. 2008 Jun;58(6):1657-63.
Steenbergen J, et al. In Vitro and In Vivo Activity of Omadacycline against Two Biothreat Pathogens, Bacillus anthracis and Yersinia pestis. Antimicrob Agents Chemother. 2017 Apr 24;61(5):e02434-16.
Hamblin KA, et al. Inhaled Liposomal Ciprofloxacin Protects against a Lethal Infection in a Murine Model of Pneumonic Plague. Front Microbiol. 2017 Feb 6;8:91.
LeMaire SA, et al. Effect of Ciprofloxacin on Susceptibility to Aortic Dissection and Rupture in Mice. JAMA Surg. 2018 Sep 1;153(9):e181804.
Steenbergen J, et al. In Vitro and In Vivo Activity of Omadacycline Against Two Biothreat Pathogens: Bacillus anthracis and Yersinia pestis. Antimicrob Agents Chemother. 2017 Feb 21.