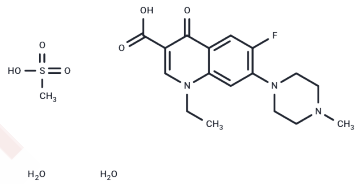
Data Sheet (Cat.No.T0425L)

TargetMol

Pefloxacin Mesylate Dihydrate

Chemical Properties



CAS No. : 149676-40-4

Formula: C17H20FN3O3·CH4O3S·2H2O

Molecular Weight: 465.49

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Pefloxacin Mesylate Dihydrate (1589 RB) , an antibacterial agent, restrains bacterial DNA replication by inhibiting DNA gyrase (topoisomerase).
Targets(IC50)	Antibacterial,Antibiotic,Topoisomerase
In vivo	Pefloxacin exerts potent bactericidal activity through several pathways and exhibits biphasic action: its killing effect decreases with increased concentration following initial rapid bactericidal activity. In bacterial cells cultured with Pefloxacin, the SOS response (non-replicative DNA repair) is induced, which inhibits replication, disrupts spindle formation, and blocks cell division, ultimately proving detrimental to bacteria by interfering with their morphological and biochemical properties. Similar to other quinolone antibiotics, Pefloxacin primarily targets bacterial DNA gyrase (topoisomerase II), a critical bacterial enzyme. It effectively inhibits members of the Enterobacteriaceae family (E. coli, Citrobacter, Klebsiella, Proteus, Morganella) with minimum inhibitory concentrations (MICs) ranging from 0.03 to 8 mg/L; for Shigella, Salmonella, and Yersinia, the MIC50/MIC90 values are 0.06/0.06, 0.12/1.0, and 0.12/0.25 mg/L respectively. Pefloxacin has weaker activity against Legionella pneumophila (MIC50/MIC90: 1.0/1.0 mg/L), very weak activity against Vibrio cholerae and Eikenella corrodes, and Listeria monocytogenes, Helicobacter pylori, and Nocardia asteroides show resistance with MIC50 ≥8 mg/L. Mycobacterial sensitivity to Pefloxacin varies from moderate to none, and most anaerobes are resistant. Rickettsiae and Chlamydiae are sensitive at treatable concentrations, while Mycoplasma and Ureaplasma show poor sensitivity (MIC50/MIC90: 2/8 mg/L). Pefloxacin's MICs for Gram-negative aerobes such as Alcaligenes, Pseudomonas aeruginosa, Acinetobacter, and Klebsiella range from 1 to 4 mg/L. For Gram-positive cocci, including coagulase-negative staphylococci and Staphylococcus aureus, even those resistant to other antibiotics, Pefloxacin maintains some sensitivity with MICs spanning 0.125 to 0.5 mg/L.

Solubility Information

Solubility	DMSO: 1 mg/mL (2.15 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), H2O: 95 mg/mL (204.09 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1483 mL	10.7414 mL	21.4827 mL
5 mM	0.4297 mL	2.1483 mL	4.2965 mL
10 mM	0.2148 mL	1.0741 mL	2.1483 mL
50 mM	0.043 mL	0.2148 mL	0.4297 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.

Reference

Bergogne-Bérézin E, et al. Int J Antimicrob Agents. 1991;1(1):29-46.