Data Sheet (Cat.No.T61737)

TargetMol

FtsZ-IN-4

Chemical Properties

CAS No. :

Formula: C21H16ClF2NO2

Molecular Weight: 387.81

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	FtsZ-IN-4, an orally active inhibitor of FtsZ (filamenting temperature-sensitive mutant Z), demonstrates remarkable antibacterial activity and favorable pharmaceutical properties. With low cytotoxicity (CC 50 >20 μg/mL) [1], FtsZ-IN-4 exhibits promising potential for therapeutic applications.
Targets(IC50)	Others,Antibacterial
In vitro	FtsZ-IN-4, identified as compound 30, exhibits potent antibacterial effects against B. subtilis and S. aureus, with minimum inhibition concentrations (MIC) of 0.008-0.25 μg/mL, according to standards [1]. This compound demonstrates rapid bactericidal activity, achieving significant reductions in bacterial population within 3 hours at concentrations of 0.064 μg/mL or 0.5 μg/mL, with minimum bactericidal concentration (MBC) to MIC ratios of ≤4, indicating efficacy within Clinical and Laboratory Standards Institute (CLSI) guidelines [1]. Additionally, at concentrations exceeding 20 μg/mL over 72 hours, FtsZ-IN-4 shows minimal cytotoxicity towards Vero cells, with a 50% cytotoxic concentration (CC50) >20 μg/mL [1]. It notably disrupts bacterial cell division, elongating B. subtilis ATCC9372 within 3 hours at 0.016 μg/mL and induces aberrant cell division leading to bacterial cell death [1]. Furthermore, FtsZ-IN-4 enhances SaFtsZ polymerization at 10 μg/mL within 0-15 minutes and inhibits SaFtsZ's GTPase activity in a dose-dependent manner within 30 minutes across concentrations of 0-35 μg/mL [1]. In cell proliferation assays, the compound significantly decreased populations of S. aureus ATCC25923 and B. subtilis ATCC9372 to below detectable limits within 3 hours at multiples of the MIC, establishing its effective bactericidal capabilities [1].
In vivo	FtsZ-IN-4 (compound 30) exhibits moderate pharmacokinetic exposure (AUC (0-t) = 544.2 h*ng/mL) and an oral bioavailability (F) of 61.2% following a 5 mg/kg oral (p.o.) administration in mice [1]. At a 25 mg/kg intravenous (i.v.) dose, it effectively reduces bacterial burden in male ICR mice infected with S. aureus ATCC25923, achieving similar efficacy to vancomycin. Its pharmacokinetic profile includes a half-life (T 1/2) of 0.28 hours and a peak concentration (Cmax) of 480.5 ng/mL following a 1 mg/kg dose, further confirming its effectiveness when administered intraperitoneally [1].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5786 mL	12.8929 mL	25.7858 mL
5 mM	0.5157 mL	2.5786 mL	5.1572 mL
10 mM	0.2579 mL	1.2893 mL	2.5786 mL
50 mM	0.0516 mL	0.2579 mL	0.5157 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.