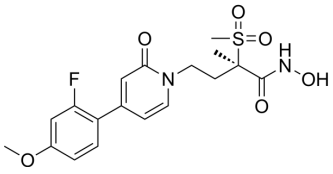
PF-5081090

Cat. No.:	HY-103251
CAS No.:	1312473-63-4
Molecular Formula:	$C_{18}H_{21}FN_2O_6S$
Molecular Weight:	412.43
Target:	Antibiotic; Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

PF-5081090 (LpxC-4) is a potent LpxC inhibitor, is a rapidly bactericidal with broad-spectrum activity. PF-5081090 serves as a regulator of lipid A biosynthesis in Gram-negative pathogens[1][2].

In Vitro

PF-5081090 shows strong potency against a broad spectrum of Gram-negative pathogens with IC_{50}s of 1.1 nM (P. aeruginosa), 0.069 nM (K. pneumonia) and MIC_{90}s of 1 μg/mL (P. aeruginosa, K. pneumoniae), 0.25 μg/mL (E. coli), 0.5 μg/mL (Enterobacter spp), 2 μg/mL (S. maltophilia)[1].

PF-5081090 (0.25 μg/mL; 0-50 h) demonstrates sustained bactericidal activities against P. aeruginosa UC12120 (A), PA-1955 (B), and K. pneumoniae KP-1487[1].

PF-5081090 (32 mg/L) increases antibiotic susceptibility in Acinetobacter baumannii with rifampicin, vancomycin, azithromycin, imipenem and amikacin[2].

PF-5081090 (32 mg/L) inhibits lipid A biosynthesis, and significantly increases cell permeability in A. baumannii[2].

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

In Vivo

PF-5081090 (8.75, 75, 300 mg/kg; s.c.; single dose) exhibits a exposure increasing in linear manner across the dose range in mice, with area under the concentration-time curve (AUC) and maximum concentration of drug in serum (C_{max}) increasing with a proportional increase in dose[1].

PF-5081090 shows potent efficacies against sentinel strains of P. aeruginosa and K. pneumonia in CD-1 mice, with effective dose (ED_{50}) ranging from 7.4-55.9 mg/kg (against acute septicemia model), <25 mg/kg (against pneumonia model), and 16.8 mg/kg (against neutropenic thigh model) in mice infected with P. aeruginosa PA-1950[1].

Pharmacokinetics of PF-5081090 in CD-1 mice[a][1]

Dose (mg/kg)	C_{max} (mg/L)	T_{max} (h)	AUC (h•mg/L)	Free AUC (h•mg/L)	$T_{1/2}$ (h)	CL (L/h/kg)	V_{ss} (L/kg)
18.75	5.02	0.25	5.09	1.58	0.6	3.79	2.20
75	15.50	0.33	17.60	5.46	0.69	4.32	3.30
300	75.40	0.33	76.30	23.70	0.68	3.92	2.53

[a] Following single subcutaneous doses.

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

REFERENCES

[1]. Tomaras AP, et al. LpxC inhibitors as new antibacterial agents and tools for studying regulation of lipid A biosynthesis in Gram-negative pathogens. mBio. 2014 Sep 30;5(5):e01551-14.

[2]. García-Quintanilla M, et al. Inhibition of LpxC Increases Antibiotic Susceptibility in Acinetobacter baumannii. Antimicrob Agents Chemother. 2016 Jul 22;60(8):5076-9.

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