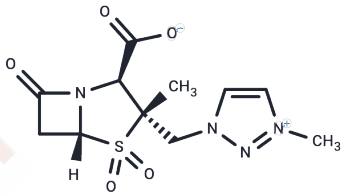
Data Sheet (Cat.No.T14081)

TargetMol

Enmetazobactam

Chemical Properties



CAS No. : 1001404-83-6

Formula: C11H14N4O5S

Molecular Weight: 314.32

Storage: Keep away from moisture,Store under nitrogen,Store at low temperature
Pure form: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Enmetazobactam (AAI101) is an extended-spectrum β-lactamase inhibitor used to treat multi-drug resistant gram-negative bacterial infections.
Targets(IC50)	Antibacterial
In vitro	Enmetazobactam, a novel extended-spectrum β-lactamase inhibitor.Of the 223 cefepime non-susceptible isolates, 95% were ceftazidime non-susceptible, 49% ertapenem non-susceptible, 57% piperacillin/tazobactam non-susceptible, 90% were multidrug-resistant (resistant to 3 drug classes), 22% produced carbapenemases, and 67% produced ESBLs.Addition of Enmetazobactam restored the activity of cefepime such that the MIC50 was reduced from >64 mg/L for cefepime to 0.13 mg/L for cefepime/Enmetazobactam, supporting its continued development treatment for infections caused by these organisms.Enmetazobactam shows potent activity against specific resistance phenotypes with MIC50 and MIC90 of 0.125 mg/L and 64 mg/L[1]. Cefepime-Enmetazobactam MICs decreases with increasing concentrations of Enmetazobactam (over the range from 1 to 16 mg/L) for most strains.which is demonstrating a concentration dependence of Enmetazobactam on restoration of the antibacterial activity of the cephalosporin[1].
In vivo	Against a panel of 20 mostly carbapenemase-producing cefepime-nonsusceptible strains of the family Enterobacteriaceae, we evaluated the MICs of cefepime in the presence of various fixed Enmetazobactam concentrations (1, 2, 4, 8, and 16 mg/liter) and the in vivo efficacy of simulated human doses of cefepime and cefepime-Enmetazobactam in a neutropenic murine thigh infection model.At 2 h after inoculation, mice were dosed with regimens that provided a profile mimicking the free drug concentration-time profile observed in humans given cefepime at 2 g every 8 h (q8h;as a 30-min infusion) or cefepime-Enmetazobactam at 2 g/0.5 g q8h (as a 30-min infusion).Efficacy was determined by calculation of the change in thigh bacterial density (log10 number of CFU) after 24 h relative to the starting inoculum (0 h). After 24 h, bacterial growth of 2.7 0.1 log10 CFU (mean standard error) was observed in control animals.Efficacy for cefepime monotherapy was observed against only 3 isolates, whereas increases in bacterial density similar to that in the control animals were noted for the remaining 17 strains (all with cefepime MICs of 64 mg/liter).The humanized

In vivo	cefepime-Enmetazobactam dosing regimen resulted in bacterial reductions of 0.5 log10 CFU for 12 of the 20 strains[2].

Solubility Information

Solubility	DMSO: 150 mg/mL (477.22 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (12.73 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1815 mL	15.9074 mL	31.8147 mL
5 mM	0.6363 mL	3.1815 mL	6.3629 mL
10 mM	0.3181 mL	1.5907 mL	3.1815 mL
50 mM	0.0636 mL	0.3181 mL	0.6363 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

Crandon JL, et al. In Vitro Activity of Cefepime/AAI101 and Comparators against Cefepime Non-susceptible Enterobacteriaceae. Pathogens. 2015 Aug 18;4(3):620-5.
Crandon JL, et al. In vivo activities of simulated human doses of cefepime and cefepime-AAI101 against multidrug-resistant Gram-negative Enterobacteriaceae. Antimicrob Agents Chemother. 2015 May;59(5):2688-94.