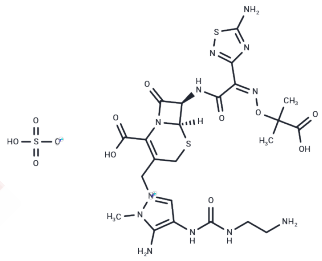
Data Sheet (Cat.No.T30790)

TargetMol

Ceftolozane sulfate

Chemical Properties



CAS No. : 936111-69-2

Formula: C23H32N12O12S3

Molecular Weight: 764.77

Storage: Store at low temperature
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	Ceftolozane sulfate (FR-264205/CXA-101) is a cephalosporin antibiotic, a penicillin-binding protein (PBP) inhibitor with antipseudomonal activity, used for infection research including pneumonia.
Targets(IC50)	Antibacterial
In vitro	**Methods**: Carbapenem-resistant and multidrug-resistant (MDR) Pseudomonas aeruginosa isolates were treated with various concentrations of Ceftolozane sulfate (≤0.12->64 μg/mL), and MIC values were determined. **Results**: Ceftolozane sulfate exhibited anti-pseudomonal activity against these resistant isolates; among 11 carbapenem-resistant isolates, 4.7% (i.e., 1 isolate) had MIC >8 μg/mL. [1] **Methods**: The in vitro activity of ceftolozane/tazobactam was determined in Pseudomonas aeruginosa and Enterobacterales by broth microdilution method. **Results**: The susceptibility rates of ceftolozane/tazobactam were 95.8%–97.5% for Pseudomonas aeruginosa and 93.3%–95.6% for Enterobacterales. [2]
In vivo	**Methods**: A neutropenic CD-1 mouse thigh infection model was used. Ceftolozane sulfate was administered by intraperitoneal injection at doses of 2–128 mg/kg every 2 hours for 24 hours, with sterile normal saline as the vehicle. **Results**: Ceftolozane sulfate monotherapy was effective against some Enterobacteriaceae strains but had limited activity against ESBL-producing strains; combination with tazobactam significantly enhanced efficacy.[3] **Methods**: A high inoculum mouse peritonitis model was used. Ceftolozane sulfate (100/50 mg/kg) was administered by intraperitoneal injection every 2 hours for 24 hours, with sterile normal saline as the vehicle. **Results**: The in vivo activity of Ceftolozane sulfate against CTX-M-15-producing Escherichia coli was lower than that of imipenem, with higher bacterial counts.[4]

Solubility Information

Solubility	H2O: 5 mg/mL (6.54 mM),Sonication is recommended. DMSO: 40 mg/mL (52.3 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3076 mL	6.5379 mL	13.0758 mL
5 mM	0.2615 mL	1.3076 mL	2.6152 mL
10 mM	0.1308 mL	0.6538 mL	1.3076 mL
50 mM	0.0262 mL	0.1308 mL	0.2615 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

Juan C, et al. Activity of a new antipseudomonal cephalosporin, CXA-101 (FR264205), against carbapenem-resistant and multidrug-resistant Pseudomonas aeruginosa clinical strains. Antimicrob Agents Chemother. 2010 Feb;54(2):846-51.

Shortridge, Dee et al. Susceptibility trends of ceftolozane/tazobactam and comparators when tested against U.S. gram-negative bacterial surveillance isolates (2012-2018). Diagnostic microbiology and infectious disease vol. 100,1 (2021): 115302.

Melchers, M J et al. Pharmacodynamics of Ceftolozane Combined with Tazobactam against Enterobacteriaceae in a Neutropenic Mouse Thigh Model. Antimicrobial agents and chemotherapy vol. 60,12 7272-7279. 21 Nov. 2016.

Canovas, J et al. Expression of CTX-M-15 limits the efficacy of ceftolozane/tazobactam against Escherichia coli in a high-inoculum murine peritonitis model. Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases vol. 26,10 (2020): 1416.e5-1416.e9.