

Ceftazidime Pentahydrate

Chemical Properties

CAS No. : 78439-06-2

Formula: C₂₂H₂₂N₆O₇S₂.5H₂O

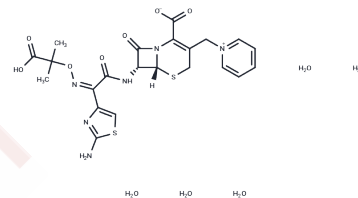
Molecular Weight: 636.65

Keep away from moisture, Keep away from direct sunlight

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	Ceftazidime Pentahydrate is a cephalosporin antibiotic with activity against gram-negative bacilli, including <i>Pseudomonas aeruginosa</i> , and is used in the study of infectious diseases.
Targets(IC50)	Antibacterial, Antibiotic
In vitro	In <i>Pseudomonas aeruginosa</i> strains (PAO1, PA1, PA2), Ceftazidime pentahydrate (approximately 0-8 µg/mL; 24 h) demonstrated antibacterial and anti-biofilm activities, with minimum inhibitory concentration (MIC) values of 2-4 µg/mL[2].
In vivo	In the murine thigh infection model, Ceftazidime Pentahydrate (2000 mg; administered via a 2-hour intravenous infusion every 8 hours for a total of 24 hours) was able to reduce the bacterial density against the isogenic NDM (New Delhi metallo-β-lactamase) strain[4].

Solubility Information

Solubility	DMSO: 80 mg/mL (125.66 mM), Sonication is recommended. H ₂ O: 7.81 mg/mL (12.27 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 3.3 mg/mL (5.18 mM), Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5707 mL	7.8536 mL	15.7072 mL
5 mM	0.3141 mL	1.5707 mL	3.1414 mL
10 mM	0.1571 mL	0.7854 mL	1.5707 mL
50 mM	0.0314 mL	0.1571 mL	0.3141 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

Richards DM, et al. Ceftazidime. A review of its antibacterial activity, pharmacokinetic properties and therapeutic use. *Drugs*. 1985 Feb;29(2):105-61.

Esmat Kamali, et al. In vitro activities of cellulase and ceftazidime, alone and in combination against *Pseudomonas aeruginosa* biofilms. *BMC Microbiol*. 2021 Dec 16;21(1):347.

Qiuxia Lin, et al. Avibactam potentiated the activity of both ceftazidime and aztreonam against *S. maltophilia* clinical isolates in vitro. *BMC Microbiol*. 2021 Feb 22;21(1):60.

Shawn H MacVane, et al. Unexpected in vivo activity of ceftazidime alone and in combination with avibactam against New Delhi metallo- β -lactamase-producing Enterobacteriaceae in a murine thigh infection model. *Antimicrob Agents Chemother*. 2014 Nov;58(11):7007-9.

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