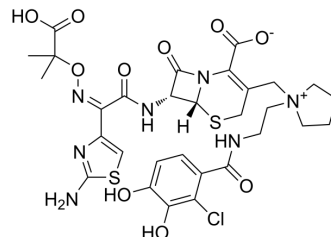


## Cefiderocol

<b>Cat. No.:</b>	HY-17628
<b>CAS No.:</b>	1225208-94-5
<b>Molecular Formula:</b>	C <sub>30</sub> H <sub>34</sub> ClN <sub>7</sub> O <sub>10</sub> S <sub>2</sub>
<b>Molecular Weight:</b>	752.21
<b>Target:</b>	Bacterial; Antibiotic
<b>Pathway:</b>	Anti-infection
<b>Storage:</b>	-20°C, stored under nitrogen * The compound is unstable in solutions, freshly prepared is recommended.



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 125 mg/mL (166.18 mM)  
 H<sub>2</sub>O : 1.06 mg/mL (1.41 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.3294 mL	6.6471 mL	13.2942 mL
	5 mM	0.2659 mL	1.3294 mL	2.6588 mL
	10 mM	0.1329 mL	0.6647 mL	1.3294 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.75 mg/mL (3.66 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.75 mg/mL (3.66 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.75 mg/mL (3.66 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Cefiderocol (S-649266) is a siderophore cephalosporin which has a potent activity against a broad range of aerobic Gram-negative bacterial species with MIC<sub>50</sub>s of 2 µg/mL or less.

#### IC<sub>50</sub> & Target

β-lactam

#### In Vitro

Cefiderocol (S-649266), a novel parenteral siderophore cephalosporin conjugated with a catechol moiety, has a characteristic antibacterial spectrum with a potent activity against a broad range of aerobic Gram-negative bacterial

species, including carbapenem-resistant strains of Enterobacteriaceae and nonfermenting bacteria such as *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. Cefiderocol has affinity mainly for PBP3 of Enterobacteriaceae and nonfermenting bacteria similar to that of GR20263. A deficiency of the iron transporter PiuA in *P. aeruginosa* or both CirA and Fiu in *Escherichia coli* can cause 16-fold increases in cefiderocol MICs, suggesting that these iron transporters contribute to the permeation of cefiderocol across the outer membrane. The deficiency of OmpK35/36 in *Klebsiella pneumoniae* and the overproduction of efflux pump MexA-MexB-OprM in *P. aeruginosa* show no significant impact on the activity of cefiderocol<sup>[1]</sup>

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

## PROTOCOL

### Cell Assay <sup>[1]</sup>

For the determination of cefiderocol MIC, iron-depleted cation-adjusted Mueller-Hinton broth (ID-CAMHB) is prepared, except for the cases that are required to determine MICs under specific conditions. The quality control MIC ranges of cefiderocol are 0.06 to 0.5 µg/mL for both *E. coli* ATCC 25922 and *P. aeruginosa* ATCC 27853. For anaerobic bacteria, brucella agar supplemented with hemin, vitamin K1, and laked sheep blood is used<sup>[1]</sup>.

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

## CUSTOMER VALIDATION

- Clin Microbiol Infect. 2022 Dec 29;S1198-743X(22)00645-0.
- J Infect Public Health. 2023 Nov 7;S1876-0341(23)00390-8.
- Front Microbiol. 03 January 2022.
- Bioorg Chem. 2020 Jan;95:103550.
- Antimicrob Agents Chemother. 2024 Jan 30:e0112023.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Ito A, et al. In Vitro Antibacterial Properties of Cefiderocol, a Novel Siderophore Cephalosporin, against Gram-Negative Bacteria. Antimicrob Agents Chemother. 2017 Dec 21;62(1).

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA