# Ceftaroline fosamil

**Cat. No.:** HY-14737

**CAS No.:** 400827-46-5

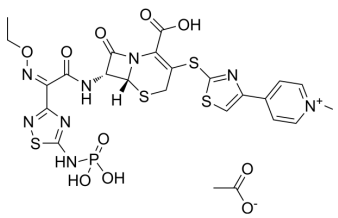
**Molecular Formula:** $C_{24}H_{25}N_8O_{10}PS_4$

**Molecular Weight:** 744.74

**Target:** Bacterial; Antibiotic

**Pathway:** Anti-infection

**Storage:** -20°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (134.28 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.3428 mL | 6.7138 mL | 13.4275 mL |
| | 5 mM | 0.2686 mL | 1.3428 mL | 2.6855 mL |
| | 10 mM | 0.1343 mL | 0.6714 mL | 1.3428 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.79 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (2.79 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.79 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Ceftaroline fosamil (TAK-599), a cephalosporin derivative, is an N-phosphono proagent of anti-methicillin-resistant Staphylococcus aureus (MRSA) T-91825. Ceftaroline fosamil can be used for the research of MRSA infection[1][2][3].

**$IC_{50}$ & Target**

β-lactam

**In Vivo**

Ceftaroline fosamil (s.c.) shows protective effects against experimental systemic infection caused by S. aureus N133 in mice, with $ED_{50}$s of 1.60-2.37 mg/kg[1].

?Ceftaroline fosamil (10 mg/kg; s.c.) disappeares rapidly and converts smoothly into T-91825 in blood of rats and monkeys[1]
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MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

**Animal Administration** [1]

Seventeen clinical S. aureus isolates (2 MSSA, 15 MRSA) are studied using the neutropenic lung infection model. Beginning 3 h after inoculation, groups of six mice receive treatment with Ceftaroline fosamil over a 24 h period. Ceftaroline fosamil doses are administered as 0.2 mL subcutaneous injections. Control animals are administered normal saline at the same volume, route, and frequency as the treatment regimens[1].

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## CUSTOMER VALIDATION

- Int J Antimicrob Agents. 2021 Sep 12;106434.
- Clin Chem. 2019 Dec;65(12):1522-1531.

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## REFERENCES

[1]. Ishikawa T, et, al. TAK-599, a novel N-phosphono type prodrug of anti-MRSA cephalosporin T-91825: synthesis, physicochemical and pharmacological properties. Bioorg Med Chem. 2003 May 29;11(11):2427-37.

[2]. Jacqueline C, et, al. In vivo efficacy of ceftaroline (PPI-0903), a new broad-spectrum cephalosporin, compared with linezolid and vancomycin against methicillin-resistant and vancomycin-intermediate Staphylococcus aureus in a rabbit endocarditis model. Antimicrob Agents Chemother. 2007 Sep;51(9):3397-400.

[3]. Parish D, et, al. Ceftaroline fosamil, a cephalosporin derivative for the potential treatment of MRSA infection. Curr Opin Investig Drugs. 2008 Feb;9(2):201-9.



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