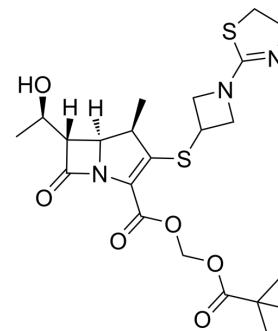


Tebipenem pivoxil

Cat. No.:	HY-B0396		
CAS No.:	161715-24-8		
Molecular Formula:	C ₂₂ H ₃₁ N ₃ O ₆ S ₂		
Molecular Weight:	497.63		
Target:	Bacterial; Antibiotic; Penicillin-binding protein (PBP)		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 200 mg/mL (401.91 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.0095 mL	10.0476 mL	20.0953 mL
	5 mM	0.4019 mL	2.0095 mL	4.0191 mL
	10 mM	0.2010 mL	1.0048 mL	2.0095 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: ≥ 5 mg/mL (10.05 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 5 mg/mL (10.05 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 5 mg/mL (10.05 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tebipenem pivoxil (L084) is an orally active antibiotic against a variety of pathogenic bacteria. Tebipenem pivoxil binds penicillin-binding protein (PBP), thereby inhibiting cell wall synthesis^[1].

IC₅₀ & Target

β-lactam

In Vitro

Tebipenem pivoxil (0-128 μg/mL; 18-24 h) displays excellent antibacterial activity against a variety of pathogenic bacteria^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay^[1]

Cell Line:	Gram-positive and Gram-negative bacteria
Concentration:	0-128 µg/mL
Incubation Time:	18–24 h
Result:	Showed inhibition with MIC ₅₀ s below 64 µg/mL against tested Gram-positive and Gram-negative bacteria.

In Vivo

Tebipenem pivoxil (L084) (0-4.00 g/kg; p.o.; once) shows minimal lethal dosage (MLD) of 4.00 g/kg and the maximum tolerance dosage (MTD) of 3.40 g/kg in mice^[1].
Tebipenem pivoxil (50 and 100 mg/kg; p.o.; once) significantly protects the sepsis mice challenged with various pathogenic bacteria^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	KM mice weighing 18–22 g ^[1]
Dosage:	2.89, 3.40 and 4.00 g/kg
Administration:	Oral administration (tablet), once
Result:	Within the 14-day observation period, only one mouse was dead in the maximum oral dosage (4.00 g/kg). The minimal lethal dosage (MLD) was 4.00 g/kg and the maximum tolerance dosage (MTD) in the mice was 3.40 g/kg. Showed dose-dependent liver and kidney damage.

Animal Model:	ICR mice, sepsis mouse models ^[1]
Dosage:	50 and 100 mg/kg
Administration:	Oral administration (tablet), once
Result:	Significantly increased the survival number of the sepsis mice within a 168 h observation period.

REFERENCES

[1]. Yao Q, et al. Antibacterial Properties of Tebipenem Pivoxil Tablet, a New Oral Carbapenem Preparation against a Variety of Pathogenic Bacteria in Vitro and in Vivo. *Molecules*. 2016 Jan 6;21(1):62.

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

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