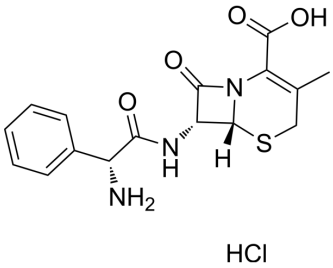
Cephalexin hydrochloride

Cat. No.:	HY-B0200A
CAS No.:	59695-59-9
Molecular Formula:	$C_{16}H_{18}ClN_3O_4S$
Molecular Weight:	383.85
Target:	Bacterial; Antibiotic; Penicillin-binding protein (PBP)
Pathway:	Anti-infection
Storage:	4°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 (260.52 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6052 mL	13.0259 mL	26.0518 mL
5 mM	0.5210 mL	2.6052 mL	5.2104 mL
10 mM	0.2605 mL	1.3026 mL	2.6052 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.51 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (6.51 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Cephalexin (Cefalexin) hydrochloride is a potent, orally active new semisynthetic cephalosporin antibiotic with a broad antibacterial spectrum. Cephalexin (Cefalexin) hydrochloride has antibacterial activity against a wide variety of gram-positive and gram-negative bacteria. Cephalexin (Cefalexin) hydrochloride targets penicillin-binding proteins (PBPs) to inhibit bacterial cell wall assembly. Cephalexin (Cefalexin) hydrochloride is used for the research of pneumonia, strep throat, and bacterial endocarditis, et al[1][2].

IC_{50} & Target

β-lactam

In Vitro

Cephalexin (Cefalexin) hydrochloride (10 μg/mL) disrupts polymer peptidoglycan (PG) biogenesis by inactivating enzymes called penicillin-binding proteins (PBPs)[1].
Cephalexin (Cefalexin) hydrochloride inhibits a broad spectrum of grampositive and gram-negative organisms with MIC

values of 2, 2, 2, 2, 4, 4.4 and 5.7 μg/mL for Bacillus anthracis, Edwardsiella taFda, Vibrio cholera, Pasteurella multocida, Edwardsiella tarda, Alcaligenes sp and Proteus rettgeri, respectively[2].

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

In Vivo

Cephalexin (Cefalexin) hydrochloride (0-50 mg/kg; p.o.; for 3.5 hours) has antibacterial activity in male Swiss-Webster mice with infected bacterial[2].

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

Animal Model:	Male Swiss-Webster mice with infected bacterial[2]
Dosage:	0-50 mg/kg
Administration:	Oral administration; for 3.5 hours
Result:	Had antibacterial activity against Streptococcus pyogenes, Streptococcus pneumoniae, Staphylococcus aureus and several gram-negative species mice.

CUSTOMER VALIDATION

- Theranostics. 2022 Jan 1;12(3):1187-1203.
- Chemosphere. 2021, 131417.
- Chemosphere. 2019 Jun;225:378-387.
- J Med Chem. 2021 Sep 21.
- Infect Immun. 2018 May 22;86(6). pii: e00090-18.

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REFERENCES

[1]. Cho H, et, al. Beta-lactam antibiotics induce a lethal malfunctioning of the bacterial cell wall synthesis machinery. Cell. 2014 Dec 4;159(6):1300-11.

[2]. Buck RE, et, al. Cefadroxil, a new broad-spectrum cephalosporin. Antimicrob Agents Chemother. 1977 Feb;11(2):324-30.

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