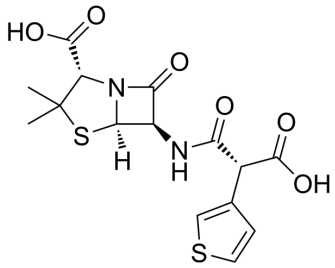
Ticarcillin

Cat. No.:	HY-139805
CAS No.:	34787-01-4
Molecular Formula:	$C_{15}H_{16}N_2O_6S_2$
Molecular Weight:	384.43
Target:	Antibiotic; Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Ticarcillin is a semisynthetic, extended-spectrum, carboxypenicillin antibacterial agent, and is active against gram-positive cocci, including streptococci and staphylococci. Ticarcillin is also effective against most gram-negative organisms, including Pseudomonas aeruginosa. Ticarcillin can be used in lower respiratory tract infections, skin and skin structure infections, urinary tract infections, and intraabdominal infections research[1][2][3].

IC_{50} & Target

β-lactam

In Vitro

Ticarcillin treatment (10 mg/L; 18 h) shows antibacterial activities[1].

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

Cell Viability Assay[2]

Cell Line:	Ps. aeruginosa
Concentration:	10 mg/L
Incubation Time:	18 hours
Result:	Showed the MIC for Ticarcillin against strain between 6.3-12.5 mg/L.

In Vivo

Ticarcillin (Subcutaneous injection; 50, 100, 200 mg/kg; once) treatment shows a dose-dependent antibacterial effect[2].

Ticarcillin (Subcutaneous injection; 50, 100, 200 mg/kg; once) treatment shows excellent pharmacokinetic assessment[2].

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

Animal Model:	Swiss type male mice injected with Ps. aeruginosa[2]
Dosage:	50, 100, 200 mg/kg
Administration:	Subcutaneous injection; 50, 100, 200 mg/kg; once
Result:	Increased effect significantly (0.001 < P < 0.0025) with increasing dose.

Animal Model:	Swiss type male mice injected with Ps. aeruginosa[2]

Dosage:	50, 100, 200 mg/kg
Administration:	Subcutaneous injection; 50, 100, 200 mg/kg; once
Result:	

	Dose (mg/kg)	AUC[a] (mg/kg)	K_{el}[b] (h^{-1})	$T_{1/2}$ (min)
Ticarcillin	50	8.76 (0.72)	1.57 (0.18)	26
	100	26.14 (0.60)	1.53 (0.11)	27
	200	54.56 (2.90)	1.47 (0.12)	28

CUSTOMER VALIDATION

- Antimicrob Agents Chemother. 2023 May 18;e0160322.
- Microbiol Spectr. 2023 Apr 24;e0069223.
- Microbiol Spectr. 2022 Dec 8;e0303822.

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REFERENCES

[1]. Cecile Formosa, et al. Nanoscale effects of antibiotics on P. aeruginosa. Nanomedicine. 2012 Jan;8(1):12-6.

[2]. G B van der Voet, et al. Comparison of the antibacterial activity of azlocillin and ticarcillin in vitro and in irradiated neutropenic mice. J Antimicrob Chemother. 1985 Nov;16(5):605-13.

[3]. Oriel Spierer, et al. Comparative activity of antimicrobials against Pseudomonas aeruginosa, Achromobacter xylosoxidans and Stenotrophomonas maltophilia keratitis isolates. Br J Ophthalmol. 2018 May;102(5):708-712.

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