Teicoplanin

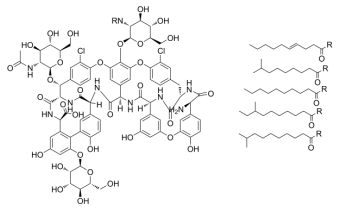
Cat. No.: HY-A0097

CAS No.: 61036-62-2

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: Powder -20°C 3 years
4°C 2 years
* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro	H_2O : 100 mg/mL (Need ultrasonic) DMSO : 25 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: PBS Solubility: 120 mg/mL (Infinity mM); Clear solution; Need ultrasonic 2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Teicoplanin is a glycopeptide antibiotic indicated for use in serious infections caused by Gram-positive bacteria, including Methicillin-resistant Staphylococcus aureus and Enterococcus aureus.Teicoplanin shows antiviral activity for HIV-1, SARS-CoV1 and SARS-CoV2. Teicoplanin sodium shows anti-MRSA activity[1][2].
IC_{50} & Target	Glycopeptide
In Vitro	Teicoplanin shows antiviral activity with IC_{50}s of 0.39, 1.66, 15.7 μM for HIV-luc/SARS-CoV-S pseudotyped viruses in HEK293T cells, 2019-nCoV-Spike-pseudoviruses in A549 cells, SARS-CoV-2 in Vero E6 cells, respectively[1]. Teicoplanin can inhibit HIV-1 virus in human CEM cell culture with EC_{50} value of 17 μM[1]. The mechanism is the inhibition of the cathepsin L protease through the interaction of the teicoplanin lipophilic moiety with the enzyme and inhibits cathepsin L activity, stops the SARS-CoV release from the late endosome[1]. Teicoplanin shows anti-MRSA activity with MICs of 0.5 mg/L in MRSA ATCC 43300[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Teicoplanin (10, 30 mg/kg; i.v.) shows a dose-dependent decline in the total bacterial density in murine MRSA thigh infection model[2].

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Animal Model:	20-30 g, Male CD1 mice (2 * 106 cfu/mL MRSA (43 300) 50 μL; murine thigh infection model) [2]
Dosage:	10, 30 mg/kg
Administration:	I.v.; once every 12 h
Result:	Showed a dose-dependent decline in the total bacterial density with the total bactericidal effect was achieved with dosages ≥10 mg/kg/day and suppression of resistance with dosages ≥30 mg/kg/day.

CUSTOMER VALIDATION

- Infect Drug Resist. 2021 Dec 16;14:5449-5456.

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REFERENCES

[1]. Vimberg V. Teicoplanin-A New Use for an Old Drug in the COVID-19 Eral Pharmaceuticals (Basel). 2021 Nov 26;14(12):1227.

[2]. Ramos-Martín V, et al. Pharmacodynamics of teicoplanin against MRSA. J Antimicrob Chemother. 2017 Dec 1;72(12):3382-3389.

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