Omadacycline

Cat. No.: HY-14865

CAS No.: 389139-89-3

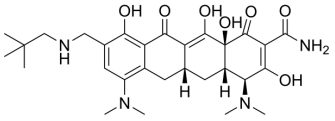
Molecular Formula: $C_{29}H_{40}N_4O_7$

Molecular Weight: 556.65

Target: Bacterial; Antibiotic

Pathway: Anti-infection

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (224.56 mM; Need ultrasonic)
Methanol : 125 mg/mL (224.56 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7965 mL	8.9823 mL	17.9646 mL
	5 mM	0.3593 mL	1.7965 mL	3.5929 mL
	10 mM	0.1796 mL	0.8982 mL	1.7965 mL

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

BIOLOGICAL ACTIVITY

Description

Omadacycline (PTK 0796), a first-in-class orally active aminomethylcycline antibacterial, is a member of the tetracycline class of antibiotics. Omadacycline acts through the inhibition of bacterial protein synthesis by binding to the 30S ribosomal subunit. Omadacycline possesses broad-spectrum antibacterial activity against aerobic and anaerobic Gram-positive and Gram-negative bacteria, as well as atypical bacteria. Omadacycline can be used for the research of acute bacterial skin and skin-structure infections, community-acquired pneumonia, and urinary tract infections[1][2][3][4].

IC_{50} & Target

Tetracycline

In Vitro

Omadacycline displays activity against methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant Enterococcus (VRE), beta-hemolytic streptococci, penicillin-resistant Streptococcus pneumonia (PRSP) and Haemophilus influenzae (H. influenzae), with MIC_{90}s of 1.0, 0.25, 0.5, 0.25 and 2.0 μg/mL respectively[2].
Omadacycline is active against strains expressing tetracycline and other antibiotics resistance by ribosomal protection and active tetracycline efflux[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	Omadacycline (0.11-18 mg/kg; a single i.v.) exhibits efficacy against Streptococcus pneumonia, Escherichia coli, and Staphylococcus aureus in mice systemic infection model, with ED_{50}s ranging from 0.30 mg/kg to 3.39 mg/kg[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Microbiol. 2023 Mar;8(3):410-423.
- Nat Struct Mol Biol. 2023 Aug 7.
- PLoS Biol. 2022 Sep 28;20(9):e3001808.
- J Clin Microbiol. 2020 Jan 28;58(2):e01603-19.
- Virulence. 2022 Dec;13(1):77-88.

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REFERENCES

[1]. Durães F, et, al. Omadacycline: A Newly Approved Antibacterial from the Class of Tetracyclines. Pharmaceuticals (Basel). 2019 Apr 21;12(2):63.

[2]. Macone AB, et, al. In vitro and in vivo antibacterial activities of omadacycline, a novel aminomethylcycline. Antimicrob Agents Chemother. 2014;58(2):1127-35.

[3]. Zhanel GG, et, al. Omadacycline: A Novel Oral and Intravenous Aminomethylcycline Antibiotic Agent. Drugs. 2020 Feb;80(3):285-313.

[4]. Markham A, et, al. Omadacycline: First Global Approval. Drugs. 2018 Dec;78(18):1931-1937.

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