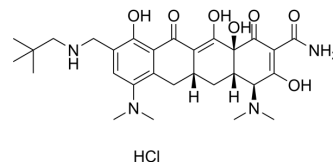


## Omadacycline hydrochloride

<b>Cat. No.:</b>	HY-14865C
<b>CAS No.:</b>	1196800-39-1
<b>Molecular Formula:</b>	C <sub>29</sub> H <sub>40</sub> N <sub>4</sub> O <sub>7</sub> ·HCl
<b>Molecular Weight:</b>	593.11
<b>Target:</b>	Bacterial; Antibiotic
<b>Pathway:</b>	Anti-infection
<b>Storage:</b>	-20°C, sealed storage, away from moisture * In solvent : -80°C, 1 years; -20°C, 6 months (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 200 mg/mL (337.21 mM; Need ultrasonic)					
	DMSO : 50 mg/mL (84.30 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		1.6860 mL	8.4301 mL	16.8603 mL
<b>5 mM</b>			0.3372 mL	1.6860 mL	3.3721 mL	
	<b>10 mM</b>		0.1686 mL	0.8430 mL	1.6860 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 50 mg/mL (84.30 mM); Clear solution; Need ultrasonic  2. Add each solvent one by one: 5% DMSO >> 95% (20% SBE-β-CD in saline) Solubility: ≥ 2.62 mg/mL (4.42 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Omadacycline (PTK 0796) hydrochloride, a first-in-class orally active aminomethylcycline antibacterial, is a member of the tetracycline class of antibiotics. Omadacycline hydrochloride acts through the inhibition of bacterial protein synthesis by binding to the 30S ribosomal subunit. Omadacycline hydrochloride possesses broad-spectrum antibacterial activity against aerobic and anaerobic Gram-positive and Gram-negative bacteria, as well as atypical bacteria. Omadacycline hydrochloride can be used for the research of acute bacterial skin and skin-structure infections, community-acquired pneumonia, and urinary tract infections <sup>[1][2][3][4]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Tetracycline
<b>In Vitro</b>	Omadacycline displays activity against methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), vancomycin-resistant

Enterococcus (VRE), beta-hemolytic streptococci, penicillin-resistant Streptococcus pneumonia (PRSP) and Haemophilus influenzae (H. influenzae), with MIC<sub>90</sub>s of 1.0, 0.25, 0.5, 0.25 and 2.0 µg/mL respectively<sup>[2]</sup>. Omadacycline is active against strains expressing tetracycline and other antibiotics resistance by ribosomal protection and active tetracycline efflux<sup>[2]</sup>. 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<sub>50</sub>s ranging from 0.30 mg/kg to 3.39 mg/kg<sup>[2]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

#### Animal Administration <sup>[1]</sup>

Mice: Omadacycline is dissolved in sterile saline. Mice are infected using a 3-mL lock-top sterile syringe with a sterile 25-gauge, 5/8-in. needle. At 1 h postinfection (p.i.), mice are dosed intravenously (i.v.) with omadacycline or comparator compounds of interest at a volume of 10 ml/kg. A minimum of four dose levels are tested per experiment with 5 mice/group. The typical doses tested ranges from 0.11 to 18 mg/kg of body weight, with exceptions for comparators that requires significantly higher or lower doses to achieve 50% efficacy<sup>[1]</sup>. 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]. Macone AB, et, al. In vitro and in vivo antibacterial activities of omadacycline, a novel aminomethylcycline. Antimicrob Agents Chemother. 2014;58(2):1127-35.
- [2]. Durães F, et, al. Omadacycline: A Newly Approved Antibacterial from the Class of Tetracyclines. Pharmaceuticals (Basel). 2019 Apr 21;12(2):63.
- [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.

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

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