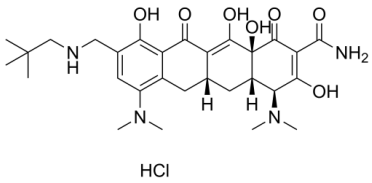
Data Sheet

Product Name:	Omadacycline (hydrochloride)
Cat. No.:	CS-6352
CAS No.:	1196800-39-1
Molecular Formula:	$C_{29}H_{40}N_4O_7.HCl$
Molecular Weight:	593.11
Target:	Antibiotic; Bacterial
Pathway:	Anti-infection
Solubility:	H2O : ≥ 50 mg/mL (84.30 mM); DMSO : 105 mg/mL (177.03 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

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[1][2][3][4].
IC50 & Target: bacteria[1] ***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]. ***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].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: Omadacycline is dissolved in sterile saline.[1]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[1].

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.

CAIndexNames:

2-Naphthacenecarboxamide, 4,7-bis(dimethylamino)-9-[[(2,2-dimethylpropyl)amino]methyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-, hydrochloride, (4S,4aS,5aR,12aS)-

SMILES:

O=C(C1=C(O)[C@@H](N(C)C)[C@@](C[C@@]2([H])C(C(C3=C(O)C(CNCC(C)(C)C)=CC(N(C)C)=C3C2)=O)=C4O)([H])[C@@]4(O)C1=O)N.Cl

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