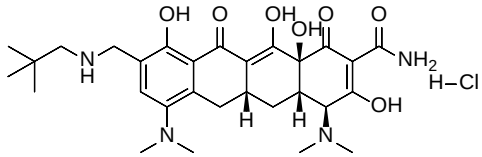
Product data sheet

MedKoo Cat#: 330044 Name: Omadacycline HCl CAS: 1196800-39-1 (HCl) Chemical Formula: $C_{29}H_{41}ClN_4O_7$ Molecular Weight: 593.118	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Omadacycline, also known as PTK 0796 and Amadacyclin, is a novel first-in-class aminomethylcycline with potent activity against important skin and pneumonia pathogens, including community-acquired methicillin-resistant Staphylococcus aureus (MRSA), β-hemolytic streptococci, penicillin-resistant Streptococcus pneumoniae, Haemophilus influenzae, and Legionella. Omadacycline is active against strains expressing the two main forms of tetracycline resistance (efflux and ribosomal protection). The primary effect of omadacycline is on bacterial protein synthesis, inhibiting protein synthesis with a potency greater than that of tetracycline. The binding site for omadacycline is similar to that for tetracycline.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	105.0	177.03
Water	50.0	84.30

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.69 mL	8.43 mL	16.86 mL
5 mM	0.34 mL	1.69 mL	3.37 mL
10 mM	0.17 mL	0.84 mL	1.69 mL
50 mM	0.03 mL	0.17 mL	0.34 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Waites KB, Crabb DM, Atkinson TP, Geisler WM, Xiao L. Omadacycline Is Highly Active In Vitro against Mycoplasma genitalium. Microbiol Spectr. 2022 Dec 21;10(6):e0365422. doi: 10.1128/spectrum.03654-22. Epub 2022 Oct 31. PMID: 36314935; PMCID: PMC9769859.
2. Serio AW, Tanaka SK, Wright K, Garrity-Ryan L. Sub-growth-inhibitory concentrations of omadacycline inhibit Staphylococcus aureus haemolytic activity in vitro. JAC Antimicrob Resist. 2021 Dec 22;4(1):dlab190. doi: 10.1093/jacamr/dlab190. PMID: 34988444; PMCID: PMC8693163.

In vivo study

1. Leahy RG, Serio AW, Wright K, Traczewski MM, Tanaka SK. Activity of omadacycline in vitro against Clostridioides difficile and preliminary efficacy assessment in a hamster model of C. difficile-associated diarrhoea. J Glob Antimicrob Resist. 2022 Sep;30:96-99. doi: 10.1016/j.jgar.2022.04.019. Epub 2022 Apr 29. PMID: 35500838.

Product data sheet

2. Macone AB, Caruso BK, Leahy RG, Donatelli J, Weir S, Draper MP, Tanaka SK, Levy SB. In vitro and in vivo antibacterial activities of omadacycline, a novel aminomethylcycline. Antimicrob Agents Chemother. 2014;58(2):1127-35. doi: 10.1128/AAC.01242-13. Epub 2013 Dec 2. PMID: 24295985; PMCID: PMC3910882.

7. Bioactivity

Biological target:

Omadacycline, also known as PTK 0796 and Amadacyclin, is a novel first-in-class aminomethylcycline.

In vitro activity

Here, this study performed *in vitro* susceptibility testing on 10 Mycoplasma genitalium isolates against omadacycline, minocycline, tetracycline, doxycycline, moxifloxacin, levofloxacin, and azithromycin. Omadacycline was the most potent agent, with all MICs of ≤0.5 μg/mL. MICs were not affected by resistance to other agents, including resistance to other tetracycline class drugs.

Reference: Microbiol Spectr. 2022 Dec 21;10(6):e0365422. https://pubmed.ncbi.nlm.nih.gov/36314935/

In vivo activity

In vivo efficacy of omadacycline was demonstrated using an intraperitoneal infection model in mice. A single intravenous dose of omadacycline exhibited efficacy against Streptococcus pneumoniae, Escherichia coli, and Staphylococcus aureus, including tet(M) and tet(K) efflux-containing strains and MRSA strains. The 50% effective doses (ED50s) for Streptococcus pneumoniae obtained ranged from 0.45 mg/kg to 3.39 mg/kg, the ED50s for Staphylococcus aureus obtained ranged from 0.30 mg/kg to 1.74 mg/kg, and the ED50 for Escherichia coli was 2.02 mg/kg.

Reference: Antimicrob Agents Chemother. 2014;58(2):1127-35. https://pubmed.ncbi.nlm.nih.gov/24295985/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.