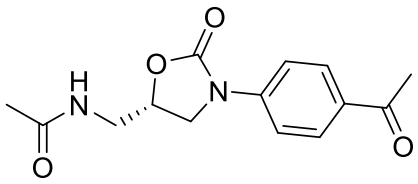
Product data sheet

MedKoo Cat#: 464747 Name: Dup-721 CAS#: 104421-21-8 Chemical Formula: $C_{14}H_{16}N_2O_4$ Exact Mass: 276.111 Molecular Weight: 276.292	
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:
Dup-721 is a new antimicrobial agent belonging to the oxazolidinone series, a new class of synthetic antibacterial agents.

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	100.0	361.94

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.62 mL	18.10 mL	36.19 mL
5 mM	0.72 mL	3.62 mL	7.24 mL
10 mM	0.36 mL	1.81 mL	3.62 mL
50 mM	0.07 mL	0.36 mL	0.72 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. Slee AM, Wuonola MA, McRipley RJ, Zajac I, Zawada MJ, Bartholomew PT, Gregory WA, Forbes M. Oxazolidinones, a new class of synthetic antibacterial agents: in vitro and in vivo activities of DuP 105 and DuP 721. Antimicrob Agents Chemother. 1987 Nov;31(11):1791-7. doi: 10.1128/AAC.31.11.1791. PMID: 3435127; PMCID: PMC175041.
2. Ashtekar DR, Costa-Periera R, Shrinivasan T, Iyyer R, Vishvanathan N, Rittel W. Oxazolidinones, a new class of synthetic antituberculosis agent. In vitro and in vivo activities of DuP-721 against Mycobacterium tuberculosis. Diagn Microbiol Infect Dis. 1991 Nov-Dec;14(6):465-71. doi: 10.1016/0732-8893(91)90002-w. PMID: 1802533.

In vivo study

1. Slee AM, Wuonola MA, McRipley RJ, Zajac I, Zawada MJ, Bartholomew PT, Gregory WA, Forbes M. Oxazolidinones, a new class of synthetic antibacterial agents: in vitro and in vivo activities of DuP 105 and DuP 721. Antimicrob Agents Chemother. 1987 Nov;31(11):1791-7. doi: 10.1128/AAC.31.11.1791. PMID: 3435127; PMCID: PMC175041.
2. Ashtekar DR, Costa-Periera R, Shrinivasan T, Iyyer R, Vishvanathan N, Rittel W. Oxazolidinones, a new class of synthetic antituberculosis agent. In vitro and in vivo activities of DuP-721 against Mycobacterium tuberculosis. Diagn Microbiol Infect Dis. 1991 Nov-Dec;14(6):465-71. doi: 10.1016/0732-8893(91)90002-w. PMID: 1802533.

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7. Bioactivity

Biological target:

DuP-721 is a broad spectrum and orally active antibacterial agent against a variety of clinically susceptible and resistant bacteria, especially M. tuberculosis.

In vitro activity

At concentrations ranging from 1.5 to 4 micrograms/ml, DuP-721 inhibited equally the strains of Mycobacterium tuberculosis susceptible and resistant to conventional antituberculosis drugs. DuP-721 inhibited M. gordonae and M. fortuitum at 3.9 micrograms/ml, M. kansasii at 1.95, and M. scrofulaceum at 15.6 micrograms/ml. It was not active against M. avium and M. intracellulare at concentrations of 250 micrograms/ml. The inhibition of the metabolism of M. tuberculosis as indicated by the liquid scintillation radiometric method was 56% at fourfold the minimum inhibitory concentration (MIC) of DuP-721 that compared well to that of the fourfold MIC concentrations of rifampicin and isoniazid. The in vitro activity of DuP-721 was not affected by reducing the pH from 6.8 to 5.5.

Reference: Diagn Microbiol Infect Dis. Nov-Dec 1991;14(6):465-71. https://pubmed.ncbi.nlm.nih.gov/1802533/

In vivo activity

In mice infected with M. tuberculosis, the 50% effective dose (ED50) for DuP-721 was 13.2 mg/kg when administered daily beginning 4 hr postinfection for 17 days. The ED50 was 71.8 mg/kg when DuP-721 was administered only on days 11 and 12 postinfection. A 100% survival rate was obtained at 50 and 160 mg/kg when DuP-721 was administered daily for 17 days, and only on days 11 and 12 after the infection, respectively. The increase in the survival time by DuP-721 at 100 mg/kg (eightfold the ED50 dose) when administered daily for 17 days beginning 4 hr after infection was inferior to that by eightfold the ED50 dose of rifampicin and isoniazid administered on days 11 and 12 postinfection. These results indicate that DuP-721 is protective against M. tuberculosis infection in mice.

Reference: Diagn Microbiol Infect Dis. Nov-Dec 1991;14(6):465-71. https://pubmed.ncbi.nlm.nih.gov/1802533/