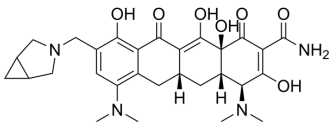
Zifanocycline

Cat. No.:	HY-139554
CAS No.:	1420294-56-9
Molecular Formula:	$C_{29}H_{36}N_4O_7$
Molecular Weight:	552.62
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Zifanocycline (KBP-7072) is a semisynthetic third-generation aminomethylcycline antibiotic that inhibits the normal function of the bacterial ribosome. Zifanocycline exhibits a broad spectrum of in vitro antibacterial activity against Gram-positive and Gram-negative bacteria, including many multidrug-resistant pathogens. Zifanocycline is available in both oral and injectable formulations. Zifanocycline can be used for the research of acute bacterial skin and skin structure infections, community-acquired bacterial pneumonia, and complicated intra-abdominal infections[1][2].
In Vitro	Zifanocycline (KBP-7072) demonstrates MIC_{90} values of <1 μg/ml across a range of pathogens, including typical and atypical pathogens associated with community-acquired bacterial pneumonia (CABP)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In Sprague-Dawley (SD) rats, beagle dogs, and CD-1 mice, KBP-7072 demonstrated a linear PK profile after the administration of single oral and i.v. and multiple oral doses. The oral bioavailability ranged from 12% to 32%. The mean time to maximum concentration (T max) ranged from 0.5 to 4 h, and the mean half-life ranged from approximately 6 to 11 h. The administration of oral doses in the fed state resulted in marked reductions in the maximum plasma concentration (C max) and the area under the concentration-time curve (AUC) compared with dosing in fasted animals. The mean bound fractions of KBP-7072 were 77.5%, 69.8%, 64.5%, 69.3%, and 69.2% in mouse, rat, dog, monkey, and human plasma, respectively[1]. KBP-7072 exhibits dose-dependent potent activity against selected methicillin-susceptible (MSSA) and methicillin-resistant (MRSA) S. aureus strains over the dose range studied (0.25 to 64 mg/kg/6 h) in neutropenic murine pneumonia infection model[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Tan X, et al. Nonclinical Pharmacokinetics, Protein Binding, and Elimination of KBP-7072, an Aminomethylcycline Antibiotic, in Animal Models. Antimicrob Agents Chemother. 2020;64(6):e00488-20. Published 2020 May 21.

[2]. Lepak AJ, et al. Pharmacokinetic/Pharmacodynamic Evaluation of a Novel Aminomethylcycline Antibiotic, KBP-7072, in the Neutropenic Murine Pneumonia Model against Staphylococcus aureus and Streptococcus pneumoniae. Antimicrob Agents Chemother. 2019;63(3):e02404-18. Published 2019 Feb 26.

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

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