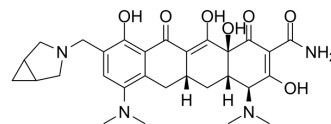


## Zifanocycline

<b>Cat. No.:</b>	HY-139554
<b>CAS No.:</b>	1420294-56-9
<b>Molecular Formula:</b>	C <sub>29</sub> H <sub>36</sub> N <sub>4</sub> O <sub>7</sub>
<b>Molecular Weight:</b>	552.62
<b>Target:</b>	Bacterial
<b>Pathway:</b>	Anti-infection
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	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 <sup>[1][2]</sup> .
<b>In Vitro</b>	Zifanocycline (KBP-7072) demonstrates MIC <sub>90</sub> values of <1 µg/ml across a range of pathogens, including typical and atypical pathogens associated with community-acquired bacterial pneumonia (CABP) <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	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 <sup>[1]</sup> . KBP-7072 exhibits dose-dependent potent activity against selected methicillin-susceptible (MSSA) and methicillin-resistant (MRSA) <i>S. aureus</i> strains over the dose range studied (0.25 to 64 mg/kg/6 h) in neutropenic murine pneumonia infection model <sup>[2]</sup> . 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.

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

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