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Zuschläge

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Polymyxin B1

Cat. No.: HY-A0248A

CAS No.: 4135-11-9

Molecular Formula: $C_{56}H_{98}N_{16}O_{13}$

Molecular Weight: 1203.48

Target: Bacterial

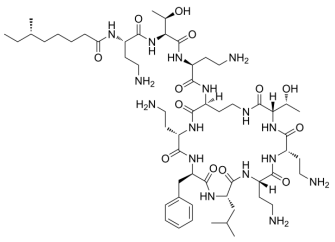
Pathway: Anti-infection

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

1 M HCL : 10 mg/mL (8.31 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.8309 mL	4.1546 mL	8.3092 mL
	5 mM	0.1662 mL	0.8309 mL	1.6618 mL
	10 mM	---	---	---

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Polymyxin B1 is a potent antimicrobial lipopeptide first derived from Bacilus polymyxa. Polymyxin B1 is the major component in Polymyxin B (HY-A0248). Polymyxin B1 can induce lysis of bacterial cells through interaction with their membranes. Polymyxin B1 has the potential for multidrug-resistant Gram-negative bacterial infections treatment[1][2].

In Vitro

Polymyxin B1 has antimicrobial activity that againsts Pseudomonas aeruginosa ATCC 27853, Acinetobacter baumannii ATCC BAA 747, Klebsiella pneumoniae ATCC 13883, P. aeruginosa 9019, A. baumannii 1261 and K. pneumoniae VM9 isolates with MIC values of 4 μg/mL, 2 μg/mL, 2 μg/mL, 4 μg/mL, 4 μg/mL and 2 μg/mL, respectively[3].

Polymyxin B1 strongly inhibits protein synthesis in yeast, and in E. coli and S. aureus[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

The pharmacokinetics of Polymyxin B1 is investigated in a rat model following intravenous administration (0.8 mg/kg). The area under the concentration-time curve for Polymyxins B1 is greater than those of colistins A and B. Colistin A colistin B. The clearance value of Polymyxins B1 is 2.39 mL/min/kg, the plasma protein binding is 82.3%, the elimination half-life is 79.5 min and the $AUC_{0-\infty}$ is 365 mg•min/L[5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- ACS Appl Bio Mater. 2023 Jun 8.

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REFERENCES

[1]. Kwa AL, et al. Pharmacokinetics of polymyxin B1 in patients with multidrug-resistant Gram-negative bacterial infections. Diagn Microbiol Infect Dis. 2008 Feb;60(2):163-7.

[2]. Berglund NA, et al. Interaction of the antimicrobial peptide polymyxin B1 with both membranes of E. coli: a molecular dynamics study. PLoS Comput Biol. 2015 Apr 17;11(4):e1004180.

[3]. Tam VH, et al. In vitro potency of various polymyxin B components. Antimicrob Agents Chemother. 2011 Sep;55(9):4490-1.

[4]. Alonso MA, et al. Compounds affecting membranes that inhibit protein synthesis in yeast. Antimicrob Agents Chemother. 1979 Dec;16(6):750-6.

[5]. Sivanesan S, et al. Pharmacokinetics of the Individual Major Components of Polymyxin B and Colistin in Rats. J Nat Prod. 2017 Jan 27;80(1):225-229.

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