Polymyxin B Sulfate

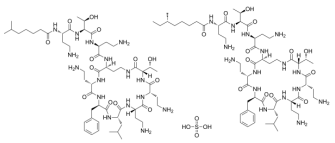
Cat. No.: HY-A0248

CAS No.: 1405-20-5

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (Need ultrasonic)
H_2O : 16.67 mg/mL (Need ultrasonic)

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.71 mg/mL (Infinity mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.71 mg/mL (Infinity mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.71 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Polymyxin B Sulfate is a potent antibacterial agent and a relatively toxic antibiotic. Polymyxin B Sulfate also is a antiendotoxin agent. Polymyxin B Sulfate shows endotoxin-neutralizing properties can be used as adjunctive research in gram-negative sepsis. Polymyxin B Sulfate shows antibacterial activities in vitro and in vivo[1][2][3].

In Vitro

Polymyxin B Sulfate shows antibacterial activities with MICs of 0.5 mg/l for E. coli strain IH3080[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Polymyxin B Sulfate (0.5-120 mg/kg; s.c.) shows antibacterial activities in thigh or lung infection mouse model[2].
Polymyxin B Sulfate (2 mg/kg, s.c.) shows potent in mouse bactericidal effect against E. coli strain IH3080[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Eight-week-old, 24-30 g, female Swiss mice[2]
Dosage:	0.5-120 mg/kg for thigh infection model; 5-120 mg/kg for lung infection mode
Administration:	S.c.
Result:	Showed antibacterial activities for three K. pneumoniae strains.

Animal Model:	7-9 weeks, female NMRI mice (E. coli IH3080)[3]
Dosage:	2 mg/kg
Administration:	S.c.
Result:	Decreased the bacterial count in a dose dependent manner.

CUSTOMER VALIDATION

- ACS Nano. 2021 Mar 23;15(3):4173-4185.
- Transl Psychiatry. 2022 Apr 7;12(1):146.
- Int J Pharm. 2021 Dec 14;612:121356.
- J Antimicrob Chemother. 2020 Sep 1;75(9):2609-2615.
- Agronomy. 2024 Feb 8, 14(2), 351.

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REFERENCES

[1]. Danner RL, et al. Purification, toxicity, and antiendotoxin activity of polymyxin B nonapeptide. Antimicrob Agents Chemother. 1989 Sep;33(9):1428-34.

[2]. Landersdorfer CB, et al. Pharmacokinetics/pharmacodynamics of systemically administered polymyxin B against Klebsiella pneumoniae in mouse thigh and lung infection models. J Antimicrob Chemother. 2018 Feb 1;73(2):462-468.

[3]. Vingsbo Lundberg C, et al. Novel polymyxin derivatives are effective in treating experimental Escherichia coli peritoneal infection in mice. J Antimicrob Chemother. 2010 May;65(5):981-5.

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