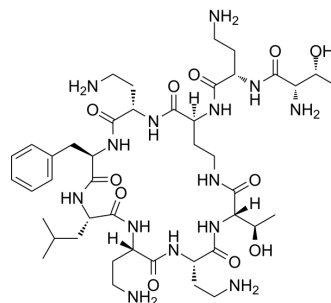


Polymyxin B nonapeptide

Cat. No.:	HY-106783
CAS No.:	86408-36-8
Molecular Formula:	C ₄₃ H ₇₄ N ₁₄ O ₁₁
Molecular Weight:	963.13
Sequence:	Thr-{Dab}-{Dab}-{Dab}-d-Phe-Leu-{Dab}-{Dab}-Thr (Lactam: Dab3-Thr9)
Sequence Shortening:	T-{Dab}-{Dab}-{Dab}-d-FL-{Dab}-{Dab}-T (Lactam: Dab3-Thr9)
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	Sealed storage, away from moisture and light 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)



SOLVENT & SOLUBILITY

In Vitro

H₂O : ≥ 100 mg/mL (103.83 mM)
 DMSO : 16.67 mg/mL (17.31 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.0383 mL	5.1914 mL	10.3828 mL
	5 mM	0.2077 mL	1.0383 mL	2.0766 mL
	10 mM	0.1038 mL	0.5191 mL	1.0383 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 1.67 mg/mL (1.73 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 1.67 mg/mL (1.73 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 1.67 mg/mL (1.73 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Polymyxin B nonapeptide is a cyclic peptide obtained from Polymyxin B by proteolytic removal of its terminal amino acyl residue. Polymyxin B nonapeptide is less toxic, lacks bactericidal activity, and retains its ability to render gram-negative

bacteria susceptible to several antibiotics by permeabilizing their outer membranes^{[1][2][3]}.

In Vitro

Polymyxin B nonapeptide (2-32 µg/mL, 24 h) has a synergistic effect with Azithromycin (HY-17506)^[1]. Polymyxin B nonapeptide (10 µg/mL) inhibits lipopolysaccharide (HY-D1056)-induced neutrophilic activation in a concentration-dependent manner^[2].

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

Cell Viability Assay^[1]

Cell Line:	E. coli strains
Concentration:	2, 4, 8, 16, 32 µg/mL
Incubation Time:	24 h
Result:	Combinated with AZT caused a significant reduction the bacterial growth after 6 h and complete killing after 24 h.

In Vivo

Polymyxin B nonapeptide (1.5, 3.0 mg/kg intravenously for 29 days) does not exhibit neuromuscular blocking, neurotoxic, or nephrotoxic effects in rats as observed with polymyxin B sulfate^[2].

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

CUSTOMER VALIDATION

- Front Microbiol. 2020 Jul 31;11:1720.

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REFERENCES

[1]. Al-Marzooq F, et al. Discerning the role of polymyxin B nonapeptide in restoring the antibacterial activity of azithromycin against antibiotic-resistant Escherichia coli. Front Microbiol. 2022 Sep 21;13:998671.

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

[3]. Ofek I, et al. Antibacterial synergism of polymyxin B nonapeptide and hydrophobic antibiotics in experimental gram-negative infections in mice. Antimicrob Agents Chemother. 1994 Feb;38(2):374-7.

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

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