SPR741 acetate

Cat. No.: HY-P1649B

Molecular Formula: $C_{46}H_{77}N_{13}O_{15}$

Molecular Weight: 1052.18

Target: Bacterial; Antibiotic

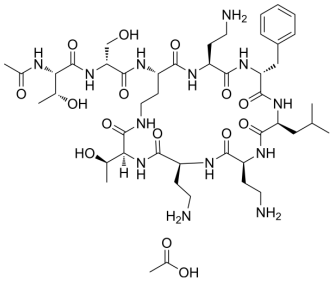
Pathway: Anti-infection

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 130 mg/mL (123.55 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.9504 mL	4.7520 mL	9.5041 mL
	5 mM	0.1901 mL	0.9504 mL	1.9008 mL
	10 mM	0.0950 mL	0.4752 mL	0.9504 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 3.25 mg/mL (3.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3.25 mg/mL (3.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.25 mg/mL (3.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SPR741 acetate (NAB741 acetate) is a cationic peptide derived from polymyxin B and is a potentiator molecule. SPR741 acetate increases the permeability of the outer membrane of Gram-negative bacteria and is used to treat severe Gram-negative bacteria infections. SPR741 acetate inhibits multidrug-resistant Gram-negative bacteria. The spectrum of activity of the antibiotic can be widened when used in combination with SPR741 acetate[1][2].

In Vitro

SPR741 potentiates antibiotics that are substrates of the AcrAB-TolC efflux pump in E. coli, effectively circumventing the contribution of this pump to intrinsic antibiotic resistance. The intrinsic resistance of E. coli to certain antibiotics that is mediated by both the outer membrane and the AcrAB-TolC efflux system can be overcome, or circumvented, by combining the antibiotic with SPR741 but that potentiation of intrinsic resistance due primarily to efflux may be limited[1].

	SPR741 lacks significant antibacterial activity as a stand-alone agent but interacts with the outer membrane of Gram-negative bacteria to increase permeability and thereby improve the accumulation of coadministered antibiotics inside the pathogen[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	SPR741 has the ability to permeabilize the outer membrane of Gram-negative bacteria, thus sensitizing them to hydrophobic antibiotics. SPR741 has a significantly safety profile of compared to that of polymyxin B, which suffers severe, dose-limiting nephrotoxicity in humans. In multiday rodent and nonhuman primate studies, polymyxin B exhibited nephrotoxicity at a far-lower exposure-normalized dose than SPR741[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nature. 2022 Apr;604(7906):541-545.
- Int J Antimicrob Agents. 2021 Sep 12;106434.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Eckburg PB, et al. Safety, Tolerability, Pharmacokinetics, and Drug Interaction Potential of SPR741, an Intravenous Potentiator, after Single and Multiple Ascending Doses and When Combined with β-Lactam Antibiotics in Healthy Subjects. Antimicrob Agents Chemother. 2019 Aug 23;63(9). pii: e00892-19.

[2]. Corbett D, et al. Potentiation of Antibiotic Activity by a Novel Cationic Peptide: Potency and Spectrum of Activity of SPR741. Antimicrob Agents Chemother. 2017 Jul 25;61(8). pii: e00200-17.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA