NP213 TFA

Cat. No.: HY-126810A

Molecular Formula: $C_{44}H_{85}F_3N_{28}O_9$

Molecular Weight: 1207.32

Sequence: Cyclo-Arg-Arg-Arg-Arg-Arg-Arg-Arg

Sequence Shortening: Cyclo-RRRRRRR

Target: Fungal

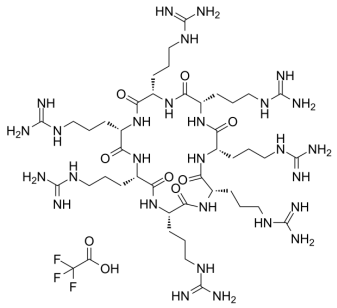
Pathway: Anti-infection

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

H_2O : 100 mg/mL (82.83 mM; Need ultrasonic)

DMSO : 100 mg/mL (82.83 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.8283 mL	4.1414 mL	8.2828 mL
	5 mM	0.1657 mL	0.8283 mL	1.6566 mL
	10 mM	0.0828 mL	0.4141 mL	0.8283 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (82.83 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.07 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.07 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NP213 TFA is a rapidly acting, novel, first-in-class synthetic antimicrobial peptide (AMP), has anti-fungal activities. NP213 TFA targets the fungal cytoplasmic membrane and plays it role via membrane perturbation and disruption. NP213 TFA is

	effective and well-tolerated in resolving nail fungal infections[1][2].
IC_{50} & Target	IC50: fungal[1]
In Vitro	NP213 (500-1000 μg/mL; 18 hours) increases the number of PI-stained T. rubrum NCPF0118 cells in samples. This results suggests that NP213 is fungicidal and the mechanisms of action involved membrane permeabilization[1]. NP213 is against T. rubrum NCPF0118, shows different MIC values against T. rubrum NCPF0118, and the MICs varies depending on the source of the keratin. The MIC values are 16-32 mg/L, 125 mg/L, and 250 mg/L for NP213 in 1640 media containing human nail Keratin, human skin Keratin and Lamb's wool Keratin, respectively[1].NP213 TFA (2-3 hours; 0-8 μg/ml) has great activity against clinically relevant yeast, including candida spp, Cryptococcus spp and Trichosporon spp. For all 122 yeast isolates, with the median MIC_{100} values of 1-2 μg/ml[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Cytotoxicity Assay[3]
In Vivo	NP213 TFA (25 mg/kg) is well tolerated in mice. In Murine models of acute disseminated candidiasis, NP213 is tolerated and efficacious and exhibits a half-life of approximately 4.5 h[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Line:	Clinically relevant yeast isolates
Concentration:	0 μg/ml; 0.125 μg/ml; 0.25 μg/ml; 0.5 μg/ml; 1 μg/ml; 2 μg/ml; 4 μg/ml; 8 μg/ml
Incubation Time:	2 h, 2.5 h, 4 h
Result:	Decreased isolates growth as a dose-dependent manner.

REFERENCES

[1]. Mercer DK,et al. Improved Methods for Assessing Therapeutic Potential of Antifungal Agents against Dermatophytes and Their Application in the Development of NP213, a Novel Onychomycosis Therapy Candidate.Antimicrob Agents Chemother. 2019 Apr 25;63(5). pii

[2]. Neelabh, et al. Sequential and Structural Aspects of Antifungal Peptides from Animals, Bacteria and Fungi Based on Bioinformatics Tools.Probiotics Antimicrob Proteins. 2016 Jun;8(2):85-101.

[3]. Novamycin®/NP339 Technology Summary

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