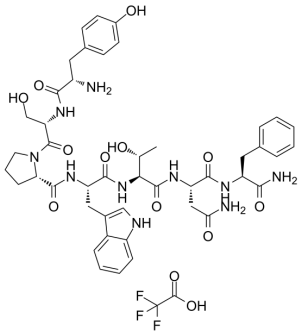
RNAIII-inhibiting peptide(TFA)



Cat. No.:	HY-P1452A
Molecular Formula:	$C_{47}H_{57}F_3N_{10}O_{13}$
Molecular Weight:	1027.01
Sequence:	Tyr-Ser-Pro-Trp-Thr-Asn-Phe
Sequence Shortening:	YSPWTNF
Target:	Bacterial
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 : ≥ 150 mg/mL (146.06 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.9737 mL	4.8685 mL	9.7370 mL
	5 mM	0.1947 mL	0.9737 mL	1.9474 mL
	10 mM	0.0974 mL	0.4869 mL	0.9737 mL

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

BIOLOGICAL ACTIVITY

Description

RNAIII-inhibiting peptide(TFA) is a potent inhibitor of Staphylococcus aureus, effective in the diseases such as cellulitis, keratitis, septic arthritis, osteomylitis and mastitis.

IC_{50} & Target

Staphylococcus aureus[1]

In Vitro

RNAIII-inhibiting peptide(TFA) is a potent inhibitor of Staphylococcus aureus. RNAIII-inhibiting peptide (RIP) inhibits the synthesis of both RNAII and RNAIII, while RAP activates in wild type S. aureus cells. RNAIII-inhibiting peptide (5 μg/10^6 cells) potently reduces bacterial cell adhesion to HEp2 cells in the absence of serum, but with slight overall reduction the presence of serum. RNAIII-inhibiting peptide inhibits while RAP induces the phosphorylation of TRAP[1].

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

In Vivo

RNAIII-inhibiting peptide (20 mg/kg, i.v.) decreases lethality in mice challenged with S. aureus ATCC 25923, with the lethality rate of 70%, and when combined with cefazolin, imipenem, vancomycin, the rates are 20%, 15% and 10%. RNAIII-inhibiting

peptide (20 mg/kg, i.v.) also causes decreased lethality in mice challenged with S. aureus Smith, with the lethality rate of 75%, and the lethality rate decreases to 30%, 10% and 10% when combined with cefazolin, imipenem, vancomycin[2].

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PROTOCOL

Animal Administration [2]

Mice[2]

Mice are randomized to receive intravenously isotonic sodium chloride solution (controls C1 and C2) and 20 mg/kg RNAIII-inhibiting peptide alone or combined with 20 mg/kg cefazolin, 10 mg/kg imipenem, or 10 mg/kg vancomycin. Animals are returned to individual cages and monitored for 7 days. The endpoints of the study are quantitative plasma bacterial evaluation and lethality. For each animal model, toxicity is evaluated on the basis of the presence of any drug-related adverse effects, i.e. local signs of inflammation, anorexia, weight loss, vomiting, diarrhea, fever, and behavioral alterations. In particular, to evaluate the physiological effects of RNAIII-inhibiting peptide, temperature, pulse, blood pressure, respirations and oxygenation are monitored in a supplementary RNAIII-inhibiting peptide-treated group without infection[2] .

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

REFERENCES

[1]. Gov Y, et al. RNAIII inhibiting peptide (RIP), a global inhibitor of Staphylococcus aureus pathogenesis: structure and function analysis. Peptides. 2001 Oct;22(10):1609-20.

[2]. Giacometti A, et al. RNAIII-inhibiting peptide improves efficacy of clinically used antibiotics in a murine model of staphylococcal sepsis. Peptides. 2005 Feb;26(2):169-75.

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