

Bactenecin TFA

Cat. No.:	HY-P1508A		
Molecular Formula:	C ₆₅ H ₁₁₉ F ₃ N ₂₄ O ₁₅ S ₂		
Molecular Weight:	1597.94		
Sequence:	Arg-Leu-Cys-Arg-Ile-Val-Val-Ile-Arg-Val-Cys-Arg (Disulfide bridge: Cys3-Cys11)	RLCRIVIRVCR (Disulfide bridge: Cys3-Cys11)	(TFA salt)
Sequence Shortening:	RLCRIVIRVCR (Disulfide bridge: Cys3-Cys11)		
Target:	Bacterial; Fungal		
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	H ₂ O : 100 mg/mL (62.58 mM); Need ultrasonic					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM		0.6258 mL	3.1290 mL	6.2581 mL
		5 mM		0.1252 mL	0.6258 mL	1.2516 mL
		10 mM		0.0626 mL	0.3129 mL	0.6258 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 (62.58 mM); Clear solution; Need ultrasonic					

BIOLOGICAL ACTIVITY

Description	Bactenecin TFA (Bactenecin, bovine TFA) is a potent 12-aa looped antimicrobial peptide isolated from bovine neutrophils. Bactenecin TFA inhibits the growth of bacteria and yeast, and kills the fungus <i>Trichophyton rubrum</i> . Bactenecin TFA increases membrane permeability, inhibits the growth and biofilm formation of <i>B. pseudomallei</i> ^{[1][2][3]} .
IC₅₀ & Target	Bacteria; Yeast; Fungus ^[1]
In Vitro	Bactenecin is synthesized by solid-phase peptide synthesis and renatured to a fully disulfide bonded form. Bactenecin inhibits the growth of Escherichia coli and Staphylococcus aureus at the same concentration reported for the peptide purified from bovine neutrophils. Bactenecin inhibits the growth of other medically important bacteria and yeast, and it kills the fungus <i>Trichophyton rubrum</i> ^[1] . Bactenecin, a dodecapeptide, is strongly cytotoxic to rat embryonic neurons, fetal rat astrocytes and human glioblastoma

cells^[2]. Bactenecin exhibits stronger binding to LPS and induces perturbation of the inner membrane of live cells. Interaction of Bactenecin with model membranes results in changes in membrane fluidity and permeability, leading to leakage of dye across the membrane^[3].

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

REFERENCES

[1]. Gallis B, et al. Antimicrobial activity of synthetic bactenecin. *Biotechnol Ther.* 1989-1990;1(4):335-46.

[2]. Radermacher SW, et al. Bactenecin, a leukocytic antimicrobial peptide, is cytotoxic to neuronal and glial cells. *J Neurosci Res.* 1993 Dec 15;36(6):657-62.

[3]. Kanjana Madhongs, et al. Antimicrobial Action of the Cyclic Peptide Bactenecin on Burkholderia Pseudomallei Correlates With Efficient Membrane Permeabilization. *PLoS Negl Trop Dis.* 2013 Jun 13;7(6):e2267.

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

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