

Product Data Sheet

Product Name: Bactenecin TFA

Cat. No.: GC63750

Chemical Properties

Cas. No.

Formula $C_{65}H_{119}F_3N_{24}O_{15}S_2$ M.Wt 1597.94

Solubility Water : 100 mg/mL (62.58 mM; Need ultrasonic) Storage -20°C, away from moisture

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

RLCRIVVIRVCR (Disulfide bridge: Cys₃-Cys₁₁) (TFA salt)

Background

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 *Trichophyton rubrum*. Bactenecin TFA increases membrane permeability, inhibits the growth and biofilm formation of *B. pseudomallei*[1][2][3].

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

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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 *Trichophyton rubrum*[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].

[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.

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