

Arcopilin A

Chemical Properties

CAS No. :

Formula: C₂₂H₂₇N₄O₄

Molecular Weight: 369.45

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	Arcopilin A (compound Arcopilin A(1)) functions as an antibacterial agent with moderate inhibitory capabilities against fungal pathogens and Gram-positive bacteria, exhibiting IC ₅₀ values of 8.9 µg/mL for KB-3-1 cells and 14 µg/mL for L929 cells. Notably, it can effectively eradicate preformed biofilms of Staphylococcus aureus. Additionally, Arcopilin A significantly boosts the efficacy of gentamicin (GM) and vancomycin (Vac), enhancing their activities by 115 and 31 times, respectively.
Targets(IC ₅₀)	Antibacterial
In vitro	Arcopilin A demonstrates significant antimicrobial properties across various tests. At concentrations ranging from 15.6 to 250 µg/mL, it disrupts preformed biofilms by about 50-60% and inhibits the growth of Staphylococcus aureus at as low as 3.9 and 7.8 µg/mL. The minimum inhibitory concentrations (MIC) for Arcopilin A are 66.7 µg/mL against Bacillus subtilis DSM 10, Staphylococcus aureus DSM 346, Schizosaccharomyces pombe DSM 70572, Candida albicans DSM 1665, and Microsporium hiemalis DSM 2656, and 31.3 µg/mL for Staphylococcus aureus DSM 1104. Additionally, Arcopilin A (3.9-31.1 µg/mL) reduces the metabolic activity of biofilms in a dose-dependent manner and inhibits the growth of planktonic cells of Staphylococcus aureus DSM 1104 at concentrations of 2-7.8 µg/mL. When used in combination with GM and Vac at concentrations of 3.9-7.8 µg/mL over 24 hours, Arcopilin A enhances the efficacy of these antibiotics, lowering the MIC values of GM from 15.6 to 0.13 µg/mL and of Vac from 2 to 0.065 µg/mL, representing an increase in effectiveness by 115 times and 31 times, respectively. This synergy marks a significant boost in the potency of GM and Vac against Staphylococcus aureus DSM 1104 planktonic cells.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7067 mL	13.5336 mL	27.0673 mL
5 mM	0.5413 mL	2.7067 mL	5.4135 mL
10 mM	0.2707 mL	1.3534 mL	2.7067 mL
50 mM	0.0541 mL	0.2707 mL	0.5413 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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