

## Antibiofilm agent-17

## Chemical Properties

CAS No. :

Formula:

Molecular Weight:

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	Antibiofilm agent-17 is a dual-action biofilm inhibitor (IC <sub>50</sub> = 0.33 μM) targeting <i>Pseudomonas aeruginosa</i> . It inhibits biofilm growth by reducing virulence production regulated by the quorum sensing system and decreasing iron acquisition capability. In a mouse wound infection model, Antibiofilm agent-17 shows synergistic antibacterial activity. This compound is useful for research on combating <i>Pseudomonas aeruginosa</i> infections.
Targets(IC <sub>50</sub> )	Antibacterial
In vitro	Antibiofilm agent-17 (Compound 19I) (0.0625-1 μM, 24 hours) acts against biofilm formation in <i>Pseudomonas aeruginosa</i> PAO1 by inhibiting the las and pqs systems, achieving up to 69.49% inhibition at 1 μM without affecting bacterial growth. It suppresses biofilm formation in PA0617, PA1065, PA1121, and PA1167 strains. By impeding the quorum sensing (QS) system, as well as clustering and swimming motility, it interferes with biofilm formation. Additionally, Antibiofilm agent-17 (0.0625-1 μM) enhances Pvd and Pch production, causing iron scarcity in bacteria, thereby inhibiting biofilm development. However, it does not affect biofilm formation in ΔpvdS and fpvA overexpressing strains. At 2.5-200 μM for 24 hours, it demonstrates no toxicity to mouse and rabbit erythrocytes, RAW264.7 cells, HepG2 cells, and <i>Galleria mellonella</i> larvae.
In vivo	Antibiofilm agent-17 (Compound 19I) at concentrations of 12.5-200 μM over a period of 0-120 hours does not affect the survival rate of zebrafish larvae. At a concentration of 1 μM, it enhances the survival rate of wax moth larvae infected with <i>Pseudomonas aeruginosa</i> PAO1 when treated with Tobramycin, Ciprofloxacin, Meropenem, and Polymyxin B (Polymyxin B). When applied to wound infections in mice at 1 μM, daily for 3 days, it accelerates wound healing when used in combination with Tobramycin and Ciprofloxacin.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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