Data Sheet (Cat.No.T207052)

TargetMol

Antibacterial synergist 3

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	Antibacterialsynergist 3 is a dual-function biofilm inhibitor with an IC50 of 0.40 μM for PAO1 and 1.45 μM for PA14. It reduces virulence in Pseudomonas aeruginosa PAO1 by inhibiting the quorum sensing (QS) system and inducing iron deficiency. Additionally, Antibacterialsynergist 3 enhances the efficacy of Tobramycin and Ciprofloxacin in a mouse wound infection model. This compound is useful for research on Pseudomonas aeruginosa infections.
Targets(IC50)	Antibacterial
In vitro	Antibacterial synergist 3 (compound JH21) (0.15625-2.5 μM) reduces biofilm formation of Pseudomonas aeruginosa PAO1 in a concentration-dependent manner. At concentrations of 0.3125-10 μM, it diminishes the production of virulence factors elastase (43%) and pyocyanin (42%), and decreases extracellular polysaccharide production in biofilm matrices by 58%. It inhibits fluorescence in PAO1-lasB-gfp and PAO1-pqsA-gfp strains without affecting the fluorescence or growth of PAO1-gfp, indicating inhibition of the las and pqs systems. Additionally, it reduces the iron content in Pseudomonas aeruginosa PAO1 by 57% and inhibits swarming motility (84%) and swimming motility (64%) in a concentration-dependent manner. Furthermore, Antibacterial synergist 3 (1.25-40 μM) exhibits no significant hemolytic effect on mouse and rabbit red blood cells, demonstrating good biosafety. At 1.25-100 μM, it shows no cytotoxicity against RAW264.7 cells.
In vivo	Antibacterial synergist 3, administered topically at 2.5 μM for three days, significantly enhances the efficacy of Tobramycin (0.0025 mg/mL) in a mouse wound infection model, reducing the survival rate of *Pseudomonas aeruginosa* to 0.97% and boosting Tobramycin's antibacterial effect by 200 fold. In combination with Ciprofloxacin (0.001 mg/mL), this synergist decreases *Pseudomonas aeruginosa* survival to 0.45% and amplifies Ciprofloxacin's antibacterial activity by 1000 fold. Moreover, varying concentrations of Antibacterial synergist 3 (0-100 μM, 0-120 hours) do not impact the survival rate (100%) of zebrafish larvae.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481