

Product Data Sheet

Product Name: PV-DPD-19

Cat. No.: GC78907

Chemical Properties

Cas. No. 3112321-20-4

Formula $C_{15}H_{19}NO_5$

M.Wt 293.32

Solubility

Storage Store at -20°C

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



Background

PV-DPD-19 is an autoinducer-2 (AI-2) quorum sensing inhibitor. PV-DPD-19 reduces AI-2 production and inhibits the expression of multiple MSCRAMMs. In co-culture systems with *Staphylococcus aureus*, PV-DPD-19 decreases the production of pyocyanin and Elastase in *Pseudomonas aeruginosa*. PV-DPD-19 impairs the adhesion ability of *Staphylococcus aureus* to lung epithelial cells. PV-DPD-19 inhibits biofilm formation of *Pseudomonas aeruginosa* (MBIC 50 = 27 µg/mL) and *Staphylococcus aureus* (MBIC 50 = 35 µg/mL). PV-DPD-19 shows no cytotoxicity in both in vitro lung epithelial cell models and in vivo *Galleria mellonella* larva models [1].

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

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In Vivo, PV-DPD-19 (1-200 μ M; injected into the proleg using a microsyringe; single dose) shows no visible acute toxicity to *Galleria mellonella* (greater wax moth) larvae even at concentrations up to 200 μ M, with the survival rate maintained at $\geq 97\%$ within 72 h^[1].

In Vitro, PV-DPD-19 inhibits biofilm formation by *Pseudomonas aeruginosa** (MBIC50 = 27 μ g/mL) and *Staphylococcus aureus** (MBIC50 = 35 μ g/mL)^[1]. PV-DPD-19 significantly reduces the adhesion rate of *Staphylococcus aureus** to human A549 epithelial cells by approximately 30%^[1]. PV-DPD-19 (2 mM; overnight, 8 h) significantly reduces AI-2 production in *Staphylococcus aureus** SH1000 as determined by the *Vibrio harveyi** bioluminescence assay^[1]. PV-DPD-19 (20-40 μ M; 16 h) reduces pyocyanin production in *Pseudomonas aeruginosa** PAO1 in a dose-dependent manner^[1]. PV-DPD-19 (3.12-200 μ M; 24 h) shows no cytotoxicity against epithelial cell line A549 ^[1].

References:

[1]. Pellegrini A, et al.. Targeting Autoinducer-2 Quorum Sensing: Novel Inhibitors Attenuate Virulence in *Staphylococcus aureus* and *Pseudomonas aeruginosa*[J]. ACS Omega, 2026.

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