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 MSCRAMM s. 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 μM; 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 μM, with the survival rate maintained at ≥97% within 72 h[1].

In Vitro, PV-DPD-19 inhibits biofilm formation by *Pseudomonas aeruginosa* (MBIC50 = 27 μg/mL) and *Staphylococcus aureus* (MBIC50 = 35 μg/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 μM; 16 h) reduces pyocyanin production in *Pseudomonas aeruginosa* PAO1 in a dose-dependent manner[1]. PV-DPD-19 (3.12-200 μM; 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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