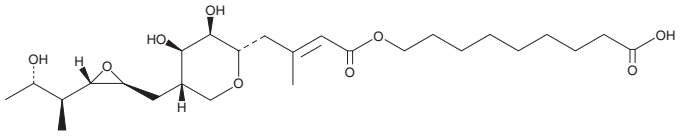
PRODUCT INFORMATION

Pseudomonic Acid

Item No. 23238

CAS Registry No.:	12650-69-0
Formal Name:	5,9-anhydro-2,3,4,8-tetradeoxy-8-[[(2S,3S)-3-[(1S,2S)-2-hydroxy-1-methylpropyl]oxiranyl]methyl]-3-methyl-L-talo-non-2E-enonic acid, 8-carboxyoctyl ester
Synonym:	BRL 4910A
MF:	$C_{26}H_{44}O_9$
FW:	500.6
Purity:	≥95%
UV/Vis.:	λ_{max}: 221 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Fermentation (species not specified)



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pseudomonic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the pseudomonic acid in the solvent of choice, which should be purged with an inert gas. Pseudomonic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of pseudomonic acid in these solvents is approximately 30 mg/ml.

Pseudomonic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, pseudomonic acid should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Pseudomonic acid has a solubility of approximately 0.2 mg/ml in a 1:4 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Pseudomonic acid is an antibiotic and bacterial metabolite that has been found in *P. fluorescens*.[1] It is bacteriostatic against *S. aureus* (MIC = 0.05 µg/ml) and active against skin wound clinical isolates of methicillin-resistant *S. aureus* (MRSA; MICs = 1-4 µg/ml).[2,3] Pseudomonic acid inhibits MRSA and *P. aeruginosa* biofilm formation *in vitro*.[4] It inhibits bacterial cell wall isoleucyl-tRNA synthetase, slowing bacterial growth.[2,4] Topical administration of pseudomonic acid (2% v/v) reduces the number of wound colony forming units (CFUs) in a mouse model of MRSA skin infection.[3]

References

1. Fuller, A.T., Mellows, G., Woolford, M., *et al.* Psuedomonic acid: An antibiotic produced by *Pseudomonas fluorescens*. *Nature* **234(5329)**, 416-417 (1971).
2. Yang, N., Cui, H., Han, F., *et al.* Paeoniflorin inhibits human pancreatic cancer cell apoptosis via suppression of MMP-9 and ERK signaling. *Oncol. Lett.* **12(2)**, 1471-1476 (2016).
3. Mohammad, H., Cushman, M., and Seleem, M.N. Antibacterial evaluation of synthetic thiazole compounds *in vitro* and *in vivo* in a methicillin-resistant *Staphylococcus aureus* (MRSA) skin infection mouse model. *PLoS One* **10(11)**, e0142321 (2015).
4. Khoshnood, S., Heidary, M., Asadi, A., *et al.* A review on mechanism of action, resistance, synergism, and clinical implications of mupirocin against *Staphylococcus aureus*. *Biomed. Pharmacother.* **109**, 1809-1818 (2019).

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