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## Product Data Sheet

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Product Name: Pyoluteorin

Cat. No.: GC12526

**Chemical Properties**

Cas. No. 25683-07-2

Chemical Name (4,5-dichloro-1H-pyrrol-2-yl)(2,6-dihydroxyphenyl)-methanone

SMILES OC1=CC=CC(O)=C1C(C2=CC(Cl)=C(Cl)N2)=OFormula  $C_{11}H_7Cl_2NO_3$  M.Wt 272.1Solubility DMF: soluble, DMSO: soluble, Ethanol: soluble, Methanol: soluble  
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 sizes: ship with RT, or blue ice upon request.

Structure **Background**

Pyoluteorin is a secondary metabolite produced by the biological control organism *Pseudomonas fluorescens* Pf-5, a rhizosphere bacterium. Pyoluteorin shows no toxicity to seed- and root-rotting plant pathogens. Pyoluteorin production is influenced by positive autoregulation. Addition of pyoluteorin to liquid cultures of Pf-5 enhanced pyoluteorin production.

Pyoluteorin functions as a signal molecule negatively regulating additional secondary metabolites produced by *Pseudomonas* [1]. The pyoluteorin contributes to the biological control of soilborne plant diseases by some strains of *Pseudomonas fluorescens*, including Pf-5. Pyoluteorin induces its own production and represses the other's production [2]. Depending on the plant, pyoluteorin production plays an important role in the suppression of damping-off by strain CHA0 without being a major mechanism in disease suppression [3].

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

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### References:

- [1] Brodhagen M, Henkels M D, Loper J E. Positive autoregulation and signaling properties of pyoluteorin, an antibiotic produced by the biological control organism *Pseudomonas fluorescens* Pf-5[J]. *Applied and environmental microbiology*, 2004, 70(3): 1758-1766.
- [2] Kidarsa T A, Goebel N C, Zabriskie T M, et al. Phloroglucinol mediates cross-talk between the pyoluteorin and 2, 4-diacetylphloroglucinol biosynthetic pathways in *Pseudomonas fluorescens* Pf-5[J]. *Molecular microbiology*, 2011, 81(2): 395-414.
- [3] Maurhofer M, Keel C, Haas D, et al. Pyoluteorin production by *Pseudomonas fluorescens* strain CHA0 is involved in the suppression of *Pythium* damping-off of cress but not of cucumber[J]. *European journal of plant pathology*, 1994, 100(3): 221-232.

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