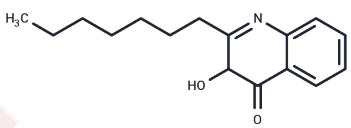
Data Sheet (Cat.No.T38373)

TargetMol

2-heptyl-3-hydroxy-4(1H)-Quinolone

Chemical Properties



CAS No. : 108985-27-9

Formula: C16H21NO2

Molecular Weight: 259.34

Storage: Store at low temperature,Store under nitrogen
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	2-heptyl-3-hydroxy-4(1H)-Quinolone (Pseudomonas Quinolone Signal) is a quorum-sensing signalling molecule produced by Pseudomonas aeruginosa in response to increased cell density. It increases the expression of the lasB gene in P. aeruginosa, the secretion of the metabolites pyocyanin and the lectin PA-IL, as well as increasing biofilm production in P. aeruginosa populations. It also reduces the iron content of the P. aeruginosa growth medium when used at a concentration of 40 μM and acts as an iron chelator in iron sulphate solutions.
Targets(IC50)	Others,Antibacterial
In vitro	2-heptyl-3-hydroxy-4(1H)-Quinolone (60 μM) increases secretion of the metabolite pyocyanin and the lectin PA-IL, as well as increases biofilm production in P. aeruginosa populations.[2] 2-heptyl-3-hydroxy-4(1H)-Quinolone (40 μM) reduces iron levels in P. aeruginosa growth media when used at a concentration and acts as an iron chelator in a Fe(III)-sulfate solution.[3]

Solubility Information

Solubility	Methanol: Soluble DMSO: 12 mg/mL (46.27 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.71 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.8559 mL	19.2797 mL	38.5594 mL
5 mM	0.7712 mL	3.8559 mL	7.7119 mL
10 mM	0.3856 mL	1.928 mL	3.8559 mL
50 mM	0.0771 mL	0.3856 mL	0.7712 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Pesci EC, et al. Quinolone signaling in the cell-to-cell communication system of Pseudomonas aeruginosa. Proc Natl Acad Sci U S A. 1999 ; 96(20):11229-11234.

Xie Y, Shi Y H, Wang L L, et al.Outer membrane vesicle contributes to the Pseudomonas aeruginosa resistance to antimicrobial peptides in the acidic airway of bronchiectasis patients.MedComm.2025, 6(2): e70084.

Diggle SP, et al. The Pseudomonas aeruginosa quinolone signal molecule overcomes the cell density-dependency of the quorum sensing hierarchy, regulates rhl-dependent genes at the onset of stationary phase and can be produced in the absence of LasR. Mol Microbiol. 2003 ; 50(1):29-43.

Bredenbruch F, et al. The Pseudomonas aeruginosa quinolone signal (PQS) has an iron-chelating activity. Environ Microbiol. 2006 ; 8(8):1318-1329.