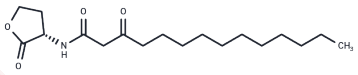
Data Sheet (Cat.No.T37339)

TargetMol

N-3-oxo-tetradecanoyl-L-Homoserine lactone

Chemical Properties



CAS No. : 177158-19-9

Formula: C18H31NO4

Molecular Weight: 325.44

Storage: Keep away from direct sunlight
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	N-3-oxo-tetradecanoyl-L-Homoserine lactone (3-oxo-C14-HSL) is a small diffusible acylhomoserine lactone signaling molecule that functions in bacterial quorum sensing by coordinating LuxIR-family transcriptional regulators in response to cell density, appears later than shorter-chain AHLs during biofilm development, stimulates putisolvin production, and ultimately inhibits biofilm formation, N-3-oxo-tetradecanoyl-L-Homoserine lactone provides a critical molecular tool for studying bacterial communication, metabolism, and anti-virulence strategies.
Targets(IC50)	Others
In vivo	In agricultural research using soybean plants (Glycine max cv. Primus), N-3-oxo-tetradecanoyl-L-Homoserine lactone functions as a rhizobacterial inducer [6].

Solubility Information

Solubility	DMSO: 80 mg/mL (245.82 mM),Sonication is recommended. DMF: 20 mg/mL (61.46 mM),Sonication is recommended. Ethanol: 10 mg/mL (30.73 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (6.15 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	3.0728 mL	15.3638 mL	30.7276 mL
5 mM	0.6146 mL	3.0728 mL	6.1455 mL
10 mM	0.3073 mL	1.5364 mL	3.0728 mL
50 mM	0.0615 mL	0.3073 mL	0.6146 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

Kuo, A. , et al. Multiple N-acyl-L-homoserine lactone autoinducers of luminescence in the marine symbiotic bacterium Vibrio fischeri. Journal of Bacteriology 176(24), 7558-7565 (1994).
Lithgow, et al. The regulatory locus cinRI in Rhizobium leguminosarum controls a network of quorum-sensing loci. Molecular Microbiology 37(1), 81-97 (2000).
McClean, et al. Quorum-sensing and Chromobacterium violaceum: Exploitation of violacein production and inhibition for the detection of N-acylhomoserine lactones. Microbiology 143, 3703-3711 (1997).
Gomi, et al. Mouse and human cell activation by N-dodecanoyl-DL-homoserine lactone, a Chromobacterium violaceum autoinducer. Infection and Immunity 74(12), 7029-7031 (2006).
Dubern, J. F. , Lugtenberg, B. J. J. , and Bloemberg, G. V. The ppuI-rsaL-ppuR quorum-sensing system regulates biofilm formation of Pseudomonas putida PCL1445 by controlling biosynthesis of the Cyclic Lipopeptides Putisolvins I and II. Journal of Bacteriology 188(8), 2898-2906 (2006).
Adss S, et al. Priming Soybean cv. Primus Leads to Successful Systemic Defense Against the Root-Lesion Nematode, Pratylenchus penetrans. Front Plant Sci. 2021;12:651943. Published 2021 May 12.