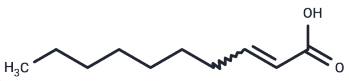
Data Sheet (Cat.No.TQ0251)

TargetMol

(Z)-2-decenoic acid

Chemical Properties



CAS No. : 15790-91-7

Formula: C10H18O2

Molecular Weight: 170.25

Storage: Keep away from direct sunlight,Keep away from moisture
Pure form: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	(Z)-2-decenoic acid (cis-dec-2-enoic acid) is an unsaturated short-chain fatty acid secreted by Pseudomonas aeruginosa. It can induce a dispersion response in biofilms formed by gram-negative and gram-positive bacteria and can also inhibit biofilm development.
Targets(IC50)	Others,Antibacterial
In vitro	(Z)-2-decenoic acid was shown to induce dispersal of biofilm microcolonies when exogenously added to P. aeruginosa PAO1 biofilms at a native concentration of 2.5 nM [2].

Solubility Information

Solubility	Ethanol: 20 mg/mL (117.47 mM),Sonication is recommended. DMSO: 100 mg/mL (587.37 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: 5 mg/mL (29.37 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	5.8737 mL	29.3686 mL	58.7372 mL
5 mM	1.1747 mL	5.8737 mL	11.7474 mL
10 mM	0.5874 mL	2.9369 mL	5.8737 mL
50 mM	0.1175 mL	0.5874 mL	1.1747 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

Gu W, Silverman RB. Synthesis of (S)-2-Boc-Amino-8-(R)-(tert-butyldimethylsilanyloxy) decanoic acid, a Precursor to the Unusual Amino Acid Residue of the Anticancer Agent Microsporin B. Tetrahedron Lett. 2011 Oct 19;52(42): 5438-5440.

David G Davies, et al. A fatty acid messenger is responsible for inducing dispersion in microbial biofilms. J Bacteriol. 2009 Mar;191(5):1393-403.

Kumar A, Singh S, Jain S, Kumar P. Synthesis, antimicrobial evaluation, QSAR and in Silico ADMET studies of decanoic acid derivatives. Acta Pol Pharm. 2011 Mar-Apr;68(2):191-204.

Naumowicz M, Petelska AD, Figaszewski ZA. Impedance analysis of complex formation equilibria in phosphatidylcholine bilayers containing decanoic acid or decylamine. Cell Biochem Biophys. 2011 Sep;61(1):145-55.