

Monoctanoin

Chemical Properties

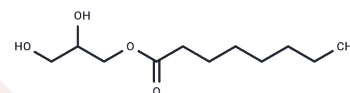
CAS No. : 502-54-5

Formula: C₁₁H₂₂O₄

Molecular Weight: 218.29

Storage: 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	Monoctanoin (Glyceryl 1-caprylate) has antibacterial activity against Staphylococcus aureus and Escherichia coli.
Targets(IC50)	Antibacterial,Antibiotic,Antifungal
In vitro	Monoctanoin exhibited an excellent antibacterial activity against both strains, with the lowest MIC and MBC of 1.28 mg/mL. A MIC of Monoctanoin remained unchanged despite the pH values of culture medium, ranging from 5 to 9, unlike that of potassium sorbate or sodium benzoate. Furthermore, Monoctanoin at MBC effectively reduced the population of E. coli and S. aureus by >5.5 log CFU/mL at 25°C within 6 h and decreased E. coli by approximately 5.0 log CFU/mL and S. aureus by 2.9 log CFU/mL at 12 h[2].

Solubility Information

Solubility	DMSO: 50 mg/mL (229.05 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: 2.5 mg/mL (11.45 mM),Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.5811 mL	22.9053 mL	45.8106 mL
5 mM	0.9162 mL	4.5811 mL	9.1621 mL
10 mM	0.4581 mL	2.2905 mL	4.5811 mL
50 mM	0.0916 mL	0.4581 mL	0.9162 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

- Wang J, et al. In Vitro Antibacterial Activity and Mechanism of Monocaprylin against Escherichia coli and Staphylococcus aureus. *J Food Prot.* 2018 Dec;81(12):1988-1996.
- Valipe SR, et al. In vitro antimicrobial properties of caprylic acid, monocaprylin, and sodium caprylate against *Dermatophilus congolensis*. *Am J Vet Res.* 2011 Mar;72(3):331-5.
- Smith BF. Dissolution of cholesterol gallstones in vitro. Gallstone matrix content and diameter, not cholesterol content, predict gallstone dissolution in monoctanoin. *Gastroenterology.* 1987 Jul;93(1):98-105.
- Tritapepe R, Di Padova C, Pozzoli M, Rovagnati P, Montorsi W. The treatment of retained biliary stones with monoctanoin: report of 16 patients. *Am J Gastroenterol.* 1984 Sep;79(9):710-4.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481