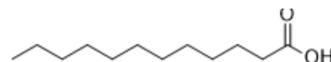


Lauric acid

Cat. No.:	HY-Y0366
CAS No.:	143-07-7
Molecular Formula:	C ₁₂ H ₂₄ O ₂
Molecular Weight:	200.32
Target:	Endogenous Metabolite; Bacterial
Pathway:	Metabolic Enzyme/Protease; Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (499.20 mM; Need ultrasonic)					
	0.1 M NaOH : 10 mg/mL (49.92 mM; ultrasonic and warming and adjust pH to 11 with NaOH and heat to 60°C)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
			1 mM	4.9920 mL	24.9601 mL	49.9201 mL
			5 mM	0.9984 mL	4.9920 mL	9.9840 mL
10 mM			0.4992 mL	2.4960 mL	4.9920 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (10.38 mM); Clear solution 2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (10.38 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	Lauric acid is a middle chain-free fatty acid with strong bactericidal properties. The EC ₅₀ s for <i>P. acnes</i> , <i>S. aureus</i> , <i>S. epidermidis</i> , are 2, 6, 4 μg/mL, respectively ^[1] .
IC ₅₀ & Target	Human Endogenous Metabolite
In Vitro	Lauric acid (0.06-125 μg/ml, 24-72 h) has much stronger antimicrobial activity in <i>P. acnes</i> , <i>S. aureus</i> , and <i>S. epidermidis</i> ^[1] . Lauric acid (5-50 μM, 24 h) increases glucose uptake and decreases GLUT-1 expression and cellular H ₂ O ₂ production in insulin-resistant macrophages ^[2] . Lauric acid (5-50 μM, 24 h) enhances mitochondrial content and mitochondrial biogenesis in the insulin-resistant macrophages ^[2] .

Lauric acid (5-50 μ M, 24 h) promotes the gene expressions (PPAR- γ , TFAM and PGC-1 α) in THP-1 macrophages^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Lauric acid (0.1 μ g/ μ L, i.h., once time) can effectively relieve P. acnes-induced inflammation without detrimental effects on skin cells in mice injected with P. acnes^[1].
Lauric acid (1-10 mg/kg, i.v., once time) reduces blood pressure and heart rate in WKY and SHR rats^[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Nakatsuji T, et al. Antimicrobial property of lauric acid against Propionibacterium acnes: its therapeutic potential for inflammatory acne vulgaris. J Invest Dermatol. 2009 Oct;129(10):2480-8.
- [2]. Tham YY, et al. Lauric acid alleviates insulin resistance by improving mitochondrial biogenesis in THP-1 macrophages. Mol Biol Rep. 2020 Dec;47(12):9595-9607.
- [3]. Alves NF, et al. Acute Treatment with Lauric Acid Reduces Blood Pressure and Oxidative Stress in Spontaneously Hypertensive Rats. Basic Clin Pharmacol Toxicol. 2017 Apr;120(4):348-353.
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Caution: Product has not been fully validated for medical applications. For research use only.

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