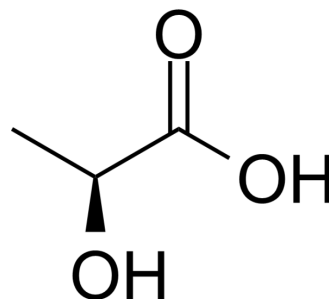


L-Lactic acid

Cat. No.:	HY-Y0479
CAS No.:	79-33-4
Molecular Formula:	C ₃ H ₆ O ₃
Molecular Weight:	90.08
Target:	Endogenous Metabolite; Bacterial; Antibiotic
Pathway:	Metabolic Enzyme/Protease; Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (1110.15 mM; Need ultrasonic)
DMSO : 100 mg/mL (1110.15 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	11.1015 mL	55.5074 mL	111.0149 mL
	5 mM	2.2203 mL	11.1015 mL	22.2030 mL
	10 mM	1.1101 mL	5.5507 mL	11.1015 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (23.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (23.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (23.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (23.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (23.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

L-Lactic acid is a building block which can be used as a precursor for the production of the bioplastic polymer poly-lactic acid. L-Lactic acid has antiproliferative activity^{[1][2][3]}.

IC ₅₀ & Target	Microbial Metabolite	Human Endogenous Metabolite
In Vitro	L-Lactic Acid (24-48 h) secreted from gastric mucosal cells enhances growth of <i>Helicobacter pylori</i> ^[1] . L-Lactic Acid (48 h) shows antiproliferative activity against human A549 and MRC5 cells, with IC ₅₀ of 26.6 μM and 23.93 μM ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	L-Lactic acid (25-50 mg/kg, i.p., twice, 4 days apart) dose-dependently enhances swimming endurance in mice ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2024 Dec 31:e2411943.
- Adv Sci (Weinh). 2023 Dec 25:e2304761.
- Small. 2022 Feb 14:e2107236.
- Diabetologia. 2024 Apr 27.
- Int J Biol Macromol. 2022 Oct 6;S0141-8130(22)02246-2.

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REFERENCES

- [1]. 1. Takahashi T, et al. L-lactic acid secreted from gastric mucosal cells enhances growth of *Helicobacter pylori*. *Helicobacter*. 2007 Oct;12(5):532-40.
- [2]. 2. Recio R, et al. Design, synthesis and biological studies of a library of NK1-Receptor Ligands Based on a 5-arylthiosubstituted 2-amino-4,6-diaryl-3-cyano-4H-pyran core: Switch from antagonist to agonist effect by chemical modification. *Eur J Med Chem*. 2017 Sep 29;138:644-660.
- [3]. 3. Zhang G, et al. L-lactic acid's improvement of swimming endurance in mice. *Int J Sport Nutr Exerc Metab*. 2009 Dec;19(6):673-84.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA