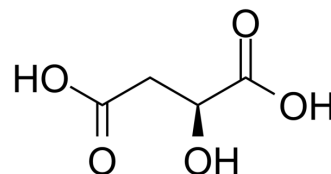


(S)-Malic acid

Cat. No.:	HY-Y1069		
CAS No.:	97-67-6		
Molecular Formula:	C ₄ H ₆ O ₅		
Molecular Weight:	134		
Target:	Endogenous Metabolite		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 100 mg/mL (746.27 mM; Need ultrasonic)				
	DMSO : 100 mg/mL (746.27 mM; Need ultrasonic)				
	Preparing Stock Solutions	<div>Solvent Concentration</div> <div>Mass</div>	1 mg	5 mg	10 mg
		1 mM	7.4627 mL	37.3134 mL	74.6269 mL
		5 mM	1.4925 mL	7.4627 mL	14.9254 mL
10 mM		0.7463 mL	3.7313 mL	7.4627 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (18.66 mM); Clear solution				
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (18.66 mM); Clear solution				
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (18.66 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	(S)-Malic acid ((S)-2-Hydroxysuccinic acid) is a dicarboxylic acid in naturally occurring form, contributes to the pleasantly sour taste of fruits and is used as a food additive.	
IC ₅₀ & Target	Human Endogenous Metabolite	Human Endogenous Metabolite

In Vitro

It is showed that ME is essential for (S)-2-Hydroxysuccinic acid (L-malic acid) utilization in *L. casei*. Furthermore, deletion of either the gene encoding the histidine kinase or the response regulator of the TC system resulted in the loss of the ability to grow on (S)-2-Hydroxysuccinic acid, thus indicating that the cognate TC system regulates and is essential for the expression of ME. Transcriptional analyses shows that expression of *maeE* is induced in the presence of (S)-2-Hydroxysuccinic acid and repressed by glucose, whereas TC system expression is induced by (S)-2-Hydroxysuccinic acid and is not repressed by glucose^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Landete JM, et al. Requirement of the *Lactobacillus casei* MaeKR two-component system for L-malic acid utilization via a malic enzyme pathway. *Appl Environ Microbiol.* 2010 Jan;76(1):84-95.

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

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