



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

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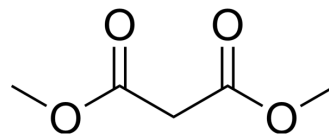
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## Dimethyl malonate

<b>Cat. No.:</b>	HY-Y1787		
<b>CAS No.:</b>	108-59-8		
<b>Molecular Formula:</b>	C <sub>5</sub> H <sub>8</sub> O <sub>4</sub>		
<b>Molecular Weight:</b>	132.11		
<b>Target:</b>	Apoptosis		
<b>Pathway:</b>	Apoptosis		
<b>Storage:</b>	Pure form	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (756.94 mM; Need ultrasonic)  
 H<sub>2</sub>O : 100 mg/mL (756.94 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	7.5694 mL	37.8472 mL	75.6945 mL
	5 mM	1.5139 mL	7.5694 mL	15.1389 mL
	10 mM	0.7569 mL	3.7847 mL	7.5694 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: ≥ 2.5 mg/mL (18.92 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (18.92 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (18.92 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Dimethyl malonate is a competitive inhibitor of succinate dehydrogenase (SDH). Dimethyl malonate is able to cross the blood-brain barrier and hydrolyse to malonate. Dimethyl malonate reduces neuronal apoptosis<sup>[1]</sup>.

#### In Vivo

Dimethyl malonate (6 mg/kg/min; intravenous infusion; 51 min) promotes return of spontaneous circulation (ROSC) and neurological performance in rats after cardiac arrest<sup>[1]</sup>.

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

Animal Model:	Sprague-Dawley male rats, cardiac arrest model <sup>[1]</sup>
Dosage:	6 mg/kg/min
Administration:	Intravenous infusion, 51 min
Result:	Improved ROSC after CA. Prevented the decline in neurological function and inhibited the apoptosis of hippocampal neurons at day 3 after CPR. Inhibited caspase-3 cleavage and increased HIF-1 $\alpha$ expression at day 3 after CPR. Decreased the level of oxidative stress at day 3 after CPR. Inhibited excessive hyperpolarization of MMP and restrained the leakage of cytochrome C after 45 min reperfusion.

## REFERENCES

[1]. Xu J, et al. Inhibiting Succinate Dehydrogenase by Dimethyl Malonate Alleviates Brain Damage in a Rat Model of Cardiac Arrest. *Neuroscience*. 2018 Nov 21;393:24-32.

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

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