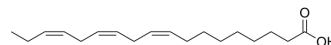


## $\alpha$ -Linolenic acid

Cat. No.:	HY-N0728
CAS No.:	463-40-1
Molecular Formula:	C <sub>18</sub> H <sub>30</sub> O <sub>2</sub>
Molecular Weight:	278.43
Target:	PI3K; Akt
Pathway:	PI3K/Akt/mTOR
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



### SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (359.16 mM; Need ultrasonic)																								
	Ethanol : 100 mg/mL (359.16 mM; Need ultrasonic)																								
	H <sub>2</sub> O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)																								
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.5916 mL</td> <td>17.9578 mL</td> <td>35.9157 mL</td> </tr> <tr> <td>5 mM</td> <td>0.7183 mL</td> <td>3.5916 mL</td> <td>7.1831 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3592 mL</td> <td>1.7958 mL</td> <td>3.5916 mL</td> </tr> </tbody> </table>					Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	3.5916 mL	17.9578 mL	35.9157 mL	5 mM	0.7183 mL	3.5916 mL	7.1831 mL	10 mM	0.3592 mL	1.7958 mL
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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 (8.98 mM); Clear solution																								
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution																								
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution																								

### BIOLOGICAL ACTIVITY

Description	$\alpha$ -Linolenic acid, isolated from <i>Perilla frutescens</i> , is an essential fatty acid that cannot be synthesized by humans. $\alpha$ -Linolenic acid can affect the process of thrombotic through the modulation of PI3K/Akt signaling. $\alpha$ -Linolenic acid possess the anti-arrhythmic properties and is related to cardiovascular disease and cancer <sup>[1]</sup> .
IC <sub>50</sub> & Target	PI3K
In Vitro	$\alpha$ -Linolenic acid converses into the longer chain fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) <sup>[1]</sup> .

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

#### In Vivo

$\alpha$ -Linolenic acid (50, 100, 250 mg/kg; for 10 days) can completely inhibit collagen- and adrenaline-induced thrombosis in mice at 250 mg/kg<sup>[1]</sup>.

$\gamma$ -Linolenic acid (35, 70, 175 mg/kg) suppresses A-V thrombus formation in rats (weighing at 250~300 g)<sup>[1]</sup>.

$\gamma$ -Linolenic acid (70 or 175 mg/kg) inhibits collagen stimulated platelet aggregation in rats<sup>[1]</sup>.

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

Animal Model:	Mice weighing at 18 ~ 22 g <sup>[1]</sup>
Dosage:	50, 100, 250 mg/kg
Administration:	For 10 days
Result:	Completely inhibited collagen- and adrenaline-induced thrombosis at 250 mg/kg.

#### CUSTOMER VALIDATION

- Redox Biol. 2023 Aug 18;66:102857.
- Eur J Pharmacol. 2023 Feb 23;175618.
- Molecules. 2023 Apr 11, 28(8), 3375.

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#### REFERENCES

[1]. Yang Q, et al. Anti-thrombotic effects of  $\alpha$ -linolenic acid isolated from Zanthoxylum bungeanum Maxim seeds. BMC Complement Altern Med. 2014 Sep 23;14:348.

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

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