α-Linolenic acid

Cat. No.: HY-N0728

CAS No.: 463-40-1

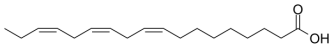
Molecular Formula: $C_{18}H_{30}O_2$

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)
H_2O : ≥ 100 mg/mL (359.16 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
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	3.5916 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 (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

α-Linolenic acid, isolated from seed oils, is an essential fatty acid that cannot be synthesized by humans. α-Linolenic acid can affect the process of thrombotic through the modulation of PI3K/Akt signaling. α-Linolenic acid possess the anti-arrhythmic properties and is related to cardiovascular disease and cancer[1].

IC_{50} & Target	PI3K	Akt

In Vitro

α-Linolenic acid converses into the longer chain fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)[1].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	α-Linolenic acid (50, 100, 250 mg/kg; for 10 days) can completely inhibit collagen- and adrenaline-induced thrombosis in mice at 250 mg/kg[1]. α-Linolenic acid (35, 70, 175 mg/kg) suppresses A-V thrombus formation in rats (weighing at 250 ~ 300 g)[1]. α-Linolenic acid (70 or 175 mg/kg) inhibits collagen stimulated platelet aggregation in rats[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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

REFERENCES

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

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com