Eicosapentaenoic acid ethyl ester

Cat. No.: HY-B0747

CAS No.: 86227-47-6

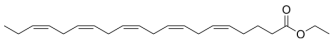
Molecular Formula: $C_{22}H_{34}O_2$

Molecular Weight: 330.5

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage: 4°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 (302.57 mM; Need ultrasonic)
Ethanol : 50 mg/mL (151.29 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0257 mL	15.1286 mL	30.2572 mL
	5 mM	0.6051 mL	3.0257 mL	6.0514 mL
	10 mM	0.3026 mL	1.5129 mL	3.0257 mL

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

In Vivo

1. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 5 mg/mL (15.13 mM); Clear solution
2. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (15.13 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 5 mg/mL (15.13 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (7.56 mM); Suspended solution; Need ultrasonic
5. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (7.56 mM); Suspended solution; Need ultrasonic
6. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Eicosapentaenoic acid ethyl ester (EPA ethyl ester) is an orally active ω-3 fatty acid agent. Eicosapentaenoic acid ethyl ester

	could improve the activity of liver β-oxidase in vitro, reduce the level of liver total triglyceride, increase the content of liver triglyceride and phospholipid ω-3 fatty acid, and increase the total ω-3 fatty acid level in rats[1][2][3].
IC_{50} & Target	Human Endogenous Metabolite
In Vivo	Eicosapentaenoic acid ethyl ester (300 mg/kg, oral, For 4 weeks) can inhibit the decrease of thyroid hormone levels and the change of thyroid follicles induced by 1-methyl-2-imidazole thiol (MMI) in hypothyroidism rats[2]. Eicosapentaenoic acid ethyl ester (1 g/kg, gavage for 5 weeks) reverses the increase in plasma cholesterol level and decreased circulating triglyceride level in rats with high-fat diet[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	MMI-Induced hypothyroid rats[2]
Dosage:	300 mg/kg
Administration:	p.o. for 4 weeks
Result:	Elevated the levels of EPA, T3 and T4

Animal Model:	Lean and overweight (high-fat-fed) rats[3]
Dosage:	1 g/kg
Administration:	i.g. for 5 weeks
Result:	Decreased the levels of cholesterol and TG.

REFERENCES

[1]. Makino M, et al. Effect of eicosapentaenoic acid ethyl ester on hypothyroid function. J Endocrinol. 2001 Nov;171(2):259-65.

[2]. Pérez-Echarri N, et al. Down-regulation in muscle and liver lipogenic genes: EPA ethyl ester treatment in lean and overweight (high-fat-fed) rats. J Nutr Biochem. 2009 Sep;20(9):705-14.

[3]. Jacobson TA. A new pure ω-3 eicosapentaenoic acid ethyl ester (AMR101) for the management of hypertriglyceridemia: the MARINE trial. Expert Rev Cardiovasc Ther. 2012 Jun;10(6):687-695.

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