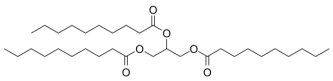
Trisdecanoin

Cat. No.: HY-N6660

CAS No.: 621-71-6

Molecular Formula: $C_{33}H_{62}O_6$

Molecular Weight: 554.84



Target: Endogenous Metabolite; Androgen Receptor

Pathway: Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor

Storage:

Powder	-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 (180.23 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8023 mL	9.0116 mL	18.0232 mL
	5 mM	0.3605 mL	1.8023 mL	3.6046 mL
	10 mM	0.1802 mL	0.9012 mL	1.8023 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 (4.51 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.51 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.51 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Trisdecanoin (Tricaprin; Glyceryl tridecanoate) is an orally available precursor of decanoic acid (DA precursor) that can be hydrolyzed to decanoic acid. Trisdecanoin and its metabolite capric acid not only provide the body with a quick source of energy, but can also affect lipid metabolism. Trisdecanoin is a major component of medium chain triglycerides (MCT), which has preventive or inhibitory properties for abdominal aortic aneurysms (AAA), inhibition of cardiovascular disease, and anti-androgen (NSAA) and anti-hyperglycemic properties. Trisdecanoin can be used as an additive in food, medicine and cosmetics[1][2][3].

In Vivo

Trisdecanoin (Intravenous injection (i.v.); 1h, 4h) can promote the metabolism of long chain fatty acids (LCFA) in the heart muscle of Atgl KO mice in lipotriglyceride lipase (Atgl) gene knockout (KO) mice. Effect of reducing lipid accumulation in the heart of AtglKO mice and improving left ventricular function of AtglKO mice[2].

Trisdecanoin (1145 mg/kg/day; Oral gavage (p.o.); two weeks) can prevent and inhibit the development of abdominal aortic aneurysms and alleviate the apoptosis and dysfunction of early smooth muscle cells (SMCs) in Male Sprague-Dawley rat models[3].

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

Animal Model:	Male Sprague-Dawley rats[3]
Dosage:	1145 mg/kg/day
Administration:	Oral gavage (p.o.)
Result:	There was no significant difference in the incidence of AAA between the control and ricaprylin groups (30.2% vs 24.0%). In contrast, the incidence of AAA in Trisdecanoin was significantly lower than in the control group (30.2% vs. 3.6%). The AAA rupture rates in control group and C8-TG group were 31.3% and 33.3%, respectively. There was no aneurysm rupture in Trisdecanoin group. The mean aortic diameter of Trisdecanoin group was significantly lower than that of control group..

REFERENCES

[1]. Suzuki A, et al. Tricaprin Rescues Myocardial Abnormality in a Mouse Model of Triglyceride Deposit Cardiomyovasculopathy. J Oleo Sci. 2018;67(8):983-989.

[2]. Kugo H, et al. Tricaprin can prevent the development of AAA by attenuating aortic degeneration. Biomed Pharmacother. 2023;160:114299.

[3]. Tricaprin (Code C153424)

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