β-Muricholic acid

Cat. No.: HY-133707

CAS No.: 2393-59-1

Molecular Formula: $C_{24}H_{40}O_5$

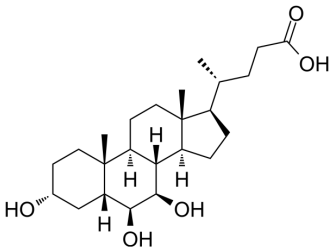
Molecular Weight: 408.57

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (244.76 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4476 mL	12.2378 mL	24.4756 mL
	5 mM	0.4895 mL	2.4476 mL	4.8951 mL
	10 mM	0.2448 mL	1.2238 mL	2.4476 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 (6.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

β-Muricholic acid is a potent and orally active biliary cholesterol-desaturating agent. β-Muricholic acid prevents cholesterol gallstones. β-Muricholic acid inhibits lipid accumulation. β-Muricholic acid has the potential for the research of nonalcoholic fatty liver disease (NAFLD)[1][2].

In Vitro

β-Muricholic acid (100 μM; 48 h) inhibits lipid accumulation in mouse primary hepatocytes[1].

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

In Vivo

β-Muricholic acid (Fed chow with 0.5% β-muricholic acid for 8 weeks) prevents diet-induced or experimental cholesterol gallstones in mice[2].

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

Animal Model:	6-8 weeks, Male C57L/J mice (with a lithogenic diet (2% cholesterol and 0.5% cholic acid)) [2]
Dosage:	0.5% β-muricholic acid
Administration:	Fed chow with 0.5% β-muricholic acid for 8 weeks
Result:	Decreased gallstone prevalence to 20% through significantly reducing biliary secretion rate, saturation index, and intestinal absorption of cholesterol, as well as inducing phase boundary shift and an enlarged Region E that prevented the transition of cholesterol from its liquid crystalline phase to solid crystals and stones.

REFERENCES

[1]. Takada S, et al. Stress can attenuate hepatic lipid accumulation via elevation of hepatic β-muricholic acid levels in mice with nonalcoholic steatohepatitis. Lab Invest. 2021 Feb;101(2):193-203.

[2]. Wang DQ, et al. Effect of beta-muricholic acid on the prevention and dissolution of cholesterol gallstones in C57L/J mice. J Lipid Res. 2002 Nov;43(11):1960-8.

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