Cholic acid

Cat. No.: HY-N0324

CAS No.: 81-25-4

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

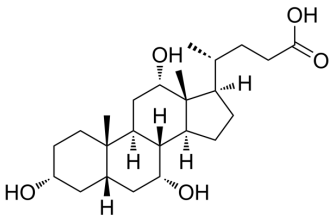
Molecular Weight: 408.57

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

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 : ≥ 50 mg/mL (122.38 mM)

0.1 M NaOH : 33.33 mg/mL (81.58 mM; ultrasonic and adjust pH to 9 with NaOH)

H_2O : < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

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

Cholic acid is a major primary bile acid produced in the liver and usually conjugated with glycine or taurine. It facilitates fat absorption and cholesterol excretion. Cholic acid is orally active[1][2].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro	Cholic acid (1 mg/mL, 30 min) competitively binds Na^+/taurocholate cotransporting polypeptide (NTCP) on HepG2 cells and significantly inhibits the uptake of Cholic acid (CA)-nanoliposomes (LPs)-Doxorubicin (DOX)-HCl, which indicates that CA-LPs-DOX-HCl are also uptaken via NTCP-mediated endocytosis pathway[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cholic acid (1% (w/w) Cholic acid-supplemented diet; p.o.; 14 days) decreases SHP (small heterodimer partner) protein expression, potentially via the upregulation of miR142-3p. Cholic acid increases CYP2D6 expression and activity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Tg-CYP2D6 adult male mice (8 weeks of age and weighing 20–25 g)[2]
Dosage:	1% (w/w) Cholic acid-supplemented diet
Administration:	Oral, 14 days
Result:	Decreases SHP expression and increased CYP2D6 activity.

CUSTOMER VALIDATION

- Cell Res. 2019 Mar;29(3):193-205.
- Cell Host Microbe. 2024 Feb 14;32(2):191-208.e9.
- Front Cell Dev Biol. 22 July 2022.
- Aquaculture. 2023 Sep 18, 740123.

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REFERENCES

[1]. Li Y, et al. Mechanism of hepatic targeting via oral administration of DSPE-PEG-Cholic acid-modified nanoliposomes. Int J Nanomedicine. 2017 Feb 28;12:1673-1684.

[2]. Pan X, et al. Cholic acid Feeding Leads to Increased CYP2D6 Expression in CYP2D6-Humanized Mice. Drug Metab Dispos. 2017 Apr;45(4):346-352.

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