Chenodeoxycholic Acid-d_4

Cat. No.: HY-76847S

CAS No.: 99102-69-9

Molecular Formula: $C_{24}H_{36}D_4O_4$

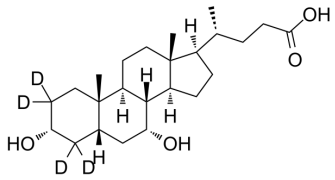
Molecular Weight: 396.6

Target: FXR; Autophagy; Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease; Autophagy

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 (252.14 mM; Need ultrasonic)
DMF : ≥ 30 mg/mL (75.64 mM)
DMSO : ≥ 20 mg/mL (50.43 mM)
Ethanol : ≥ 20 mg/mL (50.43 mM)
DMF:PBS(pH 7.2)(1:1) : ≥ 0.5 mg/mL (1.26 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5214 mL	12.6072 mL	25.2143 mL
5 mM	0.5043 mL	2.5214 mL	5.0429 mL
10 mM	0.2521 mL	1.2607 mL	2.5214 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 (6.30 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Chenodeoxycholic Acid-d_4 is the deuterium labeled Chenodeoxycholic Acid. Chenodeoxycholic Acid is a hydrophobic primary bile acid that activates nuclear receptors (FXR) involved in cholesterol metabolism.

In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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[3]. Stauffer AT, et al. Chenodeoxycholic acid and deoxycholic acid inhibit 11 beta-hydroxysteroid dehydrogenase type 2 and cause cortisol-induced transcriptional activation of the mineralocorticoid receptor. J Biol Chem. 2002 Jul 19;277(29):26286-92

[4]. Kawabe Y, et al. The molecular mechanism of the induction of the low density lipoprotein receptor by chenodeoxycholic acid in cultured human cells. Biochem Biophys Res Commun. 1995 Mar 8;208(1):405-11.

[5]. Ao M, et al. Chenodeoxycholic acid stimulates Cl(-) secretion via cAMP signaling and increases cystic fibrosis transmembrane conductance regulator phosphorylation in T84 cells. Am J Physiol Cell Physiol. 2013 Aug 15;305(4):C447-56

[6]. Noh K, et al. Farnesoid X receptor activation by chenodeoxycholic acid induces detoxifying enzymes through AMP-activated protein kinase and extracellular signal-regulated kinase 1/2-mediated phosphorylation of CCAAT/enhancer binding protein β. Drug Metab

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