Taurodeoxycholic acid sodium hydrate

Cat. No.: HY-B1899A

CAS No.: 110026-03-4

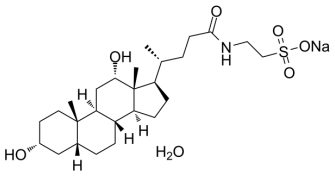
Molecular Formula: $C_{26}H_{46}NNaO_7S$

Molecular Weight: 539.7

Target: Endogenous Metabolite; G protein-coupled Bile Acid Receptor 1

Pathway: Metabolic Enzyme/Protease; GPCR/G Protein

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (231.61 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8529 mL	9.2644 mL	18.5288 mL
	5 mM	0.3706 mL	1.8529 mL	3.7058 mL
	10 mM	0.1853 mL	0.9264 mL	1.8529 mL

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

In Vivo

1. Add each solvent one by one: 0.5% CMC-Na/saline water
   Solubility: 20 mg/mL (37.06 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (3.85 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.85 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.85 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Taurodeoxycholic acid sodium hydrate (Sodium taurodeoxycholate monohydrate), a bile acid, is an amphiphilic surfactant molecule synthesized from cholesterol in the liver. Taurodeoxycholic acid sodium hydrate activates the S1PR2 pathway in addition to the TGR5 pathway[1].

IC_{50} & Target

Microbial Metabolite

In Vitro

The median plasma concentration of Taurodeoxycholate is 33.9 nM in healthy individuals[1].

Taurodeoxycholate inhibits the binding of N-^{3}H-methylscopolamine to the M3 muscarinic receptor of acetylcholine with an IC_{50} of 170 μM[1].
Taurodeoxycholate (0.05-1.00 mM; 1-6 days) stimulates intestinal epithelial cell proliferation[2].
Taurodeoxycholate (0.05-1.00 mM; 24 h) induces a significant increase in S-phase concentration and a significant decrease in G1-phase concentration of the cell cycle, increases c-myc protein and mRNA expression in IEC-6 cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[2]

Cell Line:	IEC-6 and caco-2 cells
Concentration:	0, 0.05, 0.50, and 1.00 mM
Incubation Time:	1, 2, 4 and 6 days
Result:	Significantly stimulated intestinal epithelial cell proliferation in a dose-dependent manner.

Cell Cycle Analysis[2]

Cell Line:	IEC-6 cells
Concentration:	0, 0.05, 0.50, and 1.00 mM
Incubation Time:	24 h
Result:	Significantly increased cells in S phase and decreased cells in G1-phase.

Western Blot Analysis[2]

Cell Line:	IEC-6 cells
Concentration:	0.5 mM
Incubation Time:	1 and 6 days
Result:	Significantly increased c-myc protein expression.

In Vivo

Taurodeoxycholate (0.5 mg/kg; i.v.; once) confers protection to C57BL/6N mice with sepsis, but does not protect TGR5 KO mice under sepsis[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6N mice, Lipopolysaccharides (HY-D1056) injection model of sepsis[1]
Dosage:	0.5 mg/kg
Administration:	Intravenous injection, 30 min or 24 h after LPS injection
Result:	Improved the survival rate of mice with sepsis. Decreased liver and kidney damage in septic mice. Ameliorated systemic inflammation and normalized blood pressure in septic mice.

REFERENCES

[1]. Chang S, et al. Taurodeoxycholate Increases the Number of Myeloid-Derived Suppressor Cells That Ameliorate Sepsis in Mice. Front Immunol. 2018 Sep 18;9:1984.

[2]. Yamaguchi J, et al. Taurodeoxycholate increases intestinal epithelial cell proliferation through c-myc expression. Surgery. 2004 Feb;135(2):215-21.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA