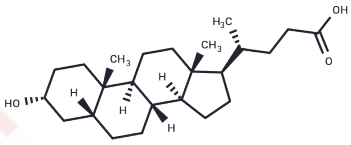
Data Sheet (Cat.No.T2202)

TargetMol

Lithocholic acid

Chemical Properties



CAS No. : 434-13-9

Formula: C24H40O3

Molecular Weight: 376.57

Storage: Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Lithocholic acid (3α-Hydroxy-5β-cholanic acid) is a toxic secondary bile acid, They were FXR antagonists (IC50=0.7, 1.4 μM), EphA2 antagonists (IC50=48, 66 μM) and EphB4 antagonists (IC50=141 μM). Lithocholic acid can promote intrahepatic cholestasis and promote tumorigenesis. Lithocholic acid is a cleanser that dissolves fat for absorption and is itself absorbed.
Targets(IC50)	Apoptosis,FXR,Endogenous Metabolite,Autophagy
In vitro	**METHODS**: Human A549, HCT-116, HT-29, Huh-7, LoVo, MGC-803, RKO, SK-HEP1, SW480 cells were treated with Lithocholic acid (200, 100, 50, P < 0.05). 25, 12.5, 6.25, 3.125, 1.5625 μM) were used to detect the cell growth inhibition by MTT method. **RESULTS**: Lithocholic acid did not affect the growth of A549, HCT-116, HT-29, Huh-7, LoVo, MGC-803, RKO, SK-HEP1, and SW480 cells (IC50> 200 μM). [1] **METHODS**: Human Caco2 and HT-1080 cells were treated with Lithocholic acid (0.1-1000 μM) for 24 hours, and the cytotoxicity was detected by MTT assay. **RESULTS**: Lithocholic acid significantly inhibited the growth of Caco2 (IC50=56 μM) and HT-1080 cells (IC50=23 μM). [2] **METHODS**: Human DLD1, HCT-116, and HCT-8 cells were treated with Lithocholic acid (25, 50, 100, 150, and 200μM) for 48 hours, and the cytotoxicity was detected by MTT assay. **RESULTS**: Lithocholic acid significantly inhibited the growth of human DLD1 (IC50=173.1 μM), HCT-116 (IC50=81.1 μM) and HCT-8 (IC50=97.4 μM) cells. [3]
In vivo	**METHODS**: To investigate the antiviral effect of Lithocholic acid, Lithocholic acid oleate (3%) and Lithocholic acid (0.5%), derivatives of LCA, were administered to HSV-1 virus infected mice. **RESULTS**: Mice treated with Lithocholic acid oleate+Lithocholic acid 48 hours before virus inoculation showed lesions on day 6 after infection, and the wound healing was better than that of the acyclovir treatment group, with reduced scar formation and better skin repair. [4]
Kinase Assay	Competitive ligand binding assay.: Ligand binding is performed using lysates from COS-7 cells transfected with expression plasmids for VDR or RXRα. Binding is performed overnight at 4°C in lysate buffer with 0.71 nM (18 Ci/mmol) [3H]1,25(OH)2D3 and bile acid competitor. Unbound [3H]1,25(OH)2D3 is removed by adsorption to dextran-coated charcoal and the supernatant removed for scintillation counting. Ki values are

Kinase Assay	calculated from a computer fit of competition curves from triplicate assays.

Solubility Information

Solubility	Ethanol: 44 mg/mL (116.84 mM),Sonication is recommended. DMSO: 49 mg/mL (130.12 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6555 mL	13.2777 mL	26.5555 mL
5 mM	0.5311 mL	2.6555 mL	5.3111 mL
10 mM	0.2656 mL	1.3278 mL	2.6555 mL
50 mM	0.0531 mL	0.2656 mL	0.5311 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Wang Z, et al. Design and synthesis of bile acid derivatives and their activity against colon cancer. RSC Med Chem. 2022 Aug 19;13(11):1391-1409.

Yan Y, Niu Z, Sun C, et al. Hepatic thyroid hormone signalling modulates glucose homeostasis through the regulation of GLP-1 production via bile acid-mediated FXR antagonism. Nature Communications. 2022, 13(1): 1-16.

Fu K, Dai S, Li Y, et al.The protective effect of forsythiaside A on 3, 5-diethoxycarbonyl-1, 4-dihydrocollidine-induced cholestatic liver injury in mice: Based on targeted metabolomics and molecular biology technology. Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease.2023, 1869(8): 166822.

Májer F, Sharma R, Mullins C, Keogh L, Phipps S, Duggan S, Kelleher D, Keely S, Long A, Radics G, Wang J, Gilmer JF. New highly toxic bile acids derived from deoxycholic acid, chenodeoxycholic acid and lithocholic acid. Bioorg Med Chem. 2014 Jan 1;22(1):256-68.

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