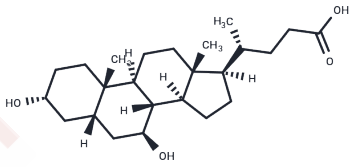
Data Sheet (Cat.No.T0700)

TargetMol

Ursodeoxycholic acid

Chemical Properties



CAS No. : 128-13-2

Formula: C24H40O4

Molecular Weight: 392.57

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	Ursodeoxycholic acid (UDCA) is a potent inhibitor of liver-specific fatty acid transporter 5 (FATP5). Ursodeoxycholic acid inhibits cholesterol absorption and is used to dissolve gallstones.
Targets(IC50)	FXR,Endogenous Metabolite,Angiotensin-converting Enzyme (ACE),GPCR19,Potassium Channel
In vitro	**METHODS**: Ovarian cancer cell line A2780 and cisplatin-resistant cell line A2780 were treated with Ursodeoxycholic acid (300 nM) for 4 hours, and the cell growth inhibition was detected by MTT assay. **RESULTS**: Ursodeoxycholic acid inhibited the growth of ovarian cancer A2780 cells (IC50=300 nM) and cisplatin-resistant A2780 cells (IC50=300 nM). [1] **METHODS**: Colorectal cancer cells SW620 and HCT116 were treated with Ursodeoxycholic acid (0, 0.00625, 0.0125, 0.025, 0.05, 0.1 mg/mL) for 24 hours, and MTT assay was used to detect the inhibitory effect of ursodeoxycholic acid on cell growth. **RESULTS**: Ursodeoxycholic acid inhibited the growth of colorectal cancer cells SW620 (IC50=0.02 mg/mL) and HCT116 (IC50=0.016 mg/mL). [2]
In vivo	**METHODS**: To study the effect of Ursodeoxycholic acid on body weight, Ursodeoxycholic acid (50, 150, and 450 mg/kg) was administered orally to mice for 21 days. **RESULTS**: Significant weight loss was observed within a week in the groups of mice receiving 50 and 450 mg/kg doses. At the 50 mg/kg dose, this weight loss persisted throughout the experiment. At a dose of 450 mg/kg, weight loss was initially observed during the first and third weeks of Ursodeoxycholic acid administration. At the 150 mg/kg dose, there was no significant difference in body weight compared to untreated mice. [3]

Solubility Information

Solubility	Ethanol: 73 mg/mL (185.95 mM),Sonication is recommended. DMSO: 255 mg/mL (649.57 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (12.74 mM),Sonication is recommended.

In vivo Formulation	*Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5473 mL	12.7366 mL	25.4732 mL
5 mM	0.5095 mL	2.5473 mL	5.0946 mL
10 mM	0.2547 mL	1.2737 mL	2.5473 mL
50 mM	0.0509 mL	0.2547 mL	0.5095 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

Sipos A,et al. Ursodeoxycholic acid prompts glycolytic dominance, reductive stress and epithelial-to-mesenchymal transition in ovarian cancer cells through NRF2 activation. Cell Death Discov. 2025 Apr 3;11(1):134.
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.
Liu S, et al. A Mechanistic Study of the Feasibility of Ursodeoxycholic Acid in the Treatment of Colon Adenocarcinoma. Drug Des Devel Ther. 2025 Mar 12;19:1839-1852.
Winston JA, et al. Secondary bile acid ursodeoxycholic acid alters weight, the gut microbiota, and the bile acid pool in conventional mice. PLoS One. 2021 Feb 18;16(2):e0246161.