Data Sheet (Cat.No.T2965)

TargetMol

Deoxycholic acid

Chemical Properties

CAS No. :	83-44-3
Formula:	C24H40O4
Molecular Weight:	392.57
Storage:	Keep away from direct sunlight,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	Deoxycholic acid (DCA) is a natural product and a TGR5 receptor agonist with cell permeability and oral activity. As a metabolite of intestinal flora, this compound is widely used in research on bile acid signal transduction, glucose and lipid metabolism, and anti-inflammatory mechanisms, and has shown therapeutic potential in diabetes and liver disease models.
Targets(IC50)	Endogenous Metabolite,GPCR19
In vitro	**Methods**: Primary rat hepatocytes were treated with 25–200 μM deoxycholic acid (DCA) for 24 h. miR-21 expression was detected by Real-Time RT-PCR, NF-κB activity was detected by luciferase reporter gene assay, PDCD4 was detected by Western blot, and cell apoptosis was detected by Hoechst staining and caspase-3/7 activity assay. Results： Deoxycholic acid dose-dependently inhibited miR-21 expression, decreased NF-κB activity, and increased PDCD4 expression and cell apoptosis. [1] **Methods**: C2C12 myoblasts were treated with Deoxycholic acid (50 μM) for 5 days to induce differentiation. Myosin heavy chain (MYH) was detected by immunofluorescence, and gene expression of myogenic differentiation and energy metabolism markers was detected by RT-qPCR. **Results**: Deoxycholic acid significantly increased myotube differentiation index and fusion capacity, upregulated Myh1/2, Pgc-1α and other gene expression; these effects were blocked by TGR5 antagonist SBI-115. [2]
In vivo	**Methods**: Primary rat hepatocytes were treated with 100 μM Deoxycholic acid (DCA) for 16 or 24 hours; relevant parameters were detected by Real-Time RT-PCR, immunoblotting, and H_2DCFDA fluorescence assay. **Results**: Short-term DCA treatment led to downregulation of miR-21 expression, accompanied by PIDD processing and caspase-2 activation, thereby promoting liver injury. [1]
Cell Research	Primary rat hepatocytes were isolated from male rats (100 to 150g) by collagenase perfusion. After isolation, hepatocytes were resuspended in complete Williams E medium and plated on BD Primaria™ culture dishes at 5×104cells/cm2. Cells are kept at 37°C in a humidified atmosphere of 5% CO2 for 4-6h to allow attachment. Plates are then washed with phosphate buffered saline (PBS) 1× in order to remove dead cells and incubated in Williams E medium supplemented with 25 to 200μM DCA

Cell Research	or no addition (control) for 24h. Primary rat hepatocytes are processed for total RNA and protein isolation, cell viability, cytotoxicity and caspase activity assays and Hoechst staining. (Only for Reference)

Solubility Information

Solubility	DMSO: 145 mg/mL (369.36 mM),Sonication is recommended. Ethanol: 56 mg/mL (142.65 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	2.5473 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

Rodrigues, Pedro M et al. Inhibition of NF-κB by deoxycholic acid induces miR-21/PDCD4-dependent hepatocellular apoptosis. Scientific reports vol.517528.1 Dec.2015,

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.

Yin, Xiangchang et al. Gut microbiota-derived deoxycholic acid mediates the exercise performance-potentiating efficacy of gypenosides. Phytomedicine : international journal of phytotherapy and phytopharmacology vol. 153 (2026): 157950.