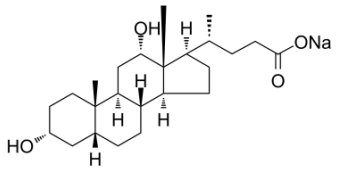
Deoxycholic acid sodium salt

Cat. No.:	HY-N0593A
CAS No.:	302-95-4
Molecular Formula:	$C_{24}H_{39}NaO_4$
Molecular Weight:	414.55
Target:	GPCR19; Endogenous Metabolite
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease
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 : 6.25 mg/mL (15.08 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4123 mL	12.0613 mL	24.1225 mL
	5 mM	0.4825 mL	2.4123 mL	4.8245 mL
	10 mM	0.2412 mL	1.2061 mL	2.4123 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: ≥ 0.62 mg/mL (1.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.62 mg/mL (1.50 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.62 mg/mL (1.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Deoxycholic acid sodium salt is specifically responsible for activating the G protein-coupled bile acid receptor TGR5 that stimulates brown adipose tissue (BAT) thermogenic activity.

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Deoxycholic acid (DCA) and chenoDeoxycholic acid (CDCA), as the common ingredients of duodenal reflux, act synergistically in many physiological and pathological processes. The cells are repeatedly exposed to 100 μM CDCA and

Deoxycholic acid at pH 5.5 for up to 120 min. To simulate chronic local recurrent disease in vitro, the gastric cancer cell line MGC803 is exposed to acidified medium (pH 5.5) containing 100 μM Deoxycholic acid and CDCA. An untreated log-growth MGC803 cell line is generated to be used as a control in normal pH media. After daily 10 min exposure to the acidified bile acids for 60 weeks, MGC803-resistant cells are able to survive and proliferate after 120 min exposure[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

MGC803 cells are cultured in Roswell Park Memorial Institute media supplemented with 10% fetal calf serum and 100 U/mL Penicillin and 100 mg/mL Streptomycin. To generate MGC803-resistant cells, the pH value of the MGC803 culture medium is adjusted to the experimental conditions using the hydrochloric acid (A). The bile acids GCDA and Deoxycholic acid are diluted to optimal working concentrations of 100 μM (B) with culture medium, and the overall pH (A+B) is adjusted to pH 5.5, simulating the gastric environment. Initially, MGC803 cells are chronically exposed to acidified medium with bile acids (A+B) for 10 min every 24 h. The experimental time and conditions are optimized in our preliminary experiments, which show that 10 min is enough and does not result in cell damage. This procedure is repeated and it takes 60 weeks for the MGC803 cells to survive and proliferate under the exposure of A+B for 120 min. Control untreated cells are cultured in neutral RPMI medium at pH 7.4 in parallel to the resistant cells for 60 weeks. The morphological changes in MGC803 cells exposed to acidified bile acids (A+B) are documented at 30 and 60 weeks[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Res. 2019 Mar;29(3):193-205.
- Nat Cell Biol. 2018 Oct;20(10):1145-1158.
- Microbiome. 2019 Mar 20;7(1):43.
- Cancer Cell Int. 2019 Jan 31;19:24.
- Cell Death Discov. 2020 Jul 6;6:56.

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REFERENCES

[1]. Somm E, et al. β-Klotho deficiency protects against obesity through a crosstalk between liver, microbiota, and brown adipose tissue. JCI Insight. 2017 Apr 20;2(8). pii: 91809.

[2]. Wang X, et al. Acidified bile acids enhance tumor progression and telomerase activity of gastric cancer in micedependent on c-Myc expression. Cancer Med. 2017 Apr;6(4):788-797.

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