

Product Data Sheet

Product Name: Chenodeoxycholic Acid-d4

Cat. No.: GC47076

Chemical Properties

Cas. No. 99102-69-9

SMILES O[C@@H]1C([2H])([2H])C[C@@]2(C)[C@@](C[C@@H](O)[C@]3([H])[C@]2([H])CC[C@@]4(C)[C@@]3([H])CC[C@]4([H])[C@H](C)CCC(O)=O)([H])C1([2H])[2H]

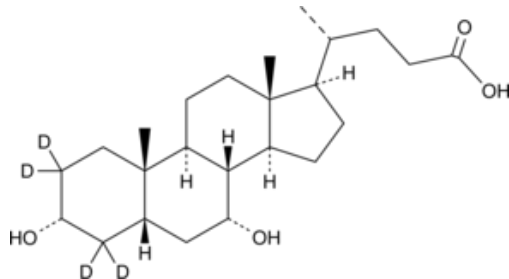
Formula $C_{24}H_{36}D_4O_4$ M.Wt 396.6

Solubility DMF: 30 mg/ml, DMF:PBS(pH 7.2) (1:1): 0.5 mg/ml, DMSO: 20 mg/ml, Ethanol: 20 mg/ml
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Determination of Bile Acid Homeostasis in Cells

This protocol is provided as a guide only; please modify it according to your specific needs.

Cell Preparation: Co-culture human hepatocytes with non-parenchymal cells in a 24-well plate. After 7 days of culture, maintain the cells under the following conditions: 37°C, 5% CO₂, and 90% humidity.

Addition of Labeling Agent: Add culture medium containing 2.5µM Chenodeoxycholic Acid-d4. Include a DMSO control group.

Caution: Product has not been fully validated for medical applications. For research use only.

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Incubation: Incubate the cells under the following conditions: 37°C, 5% CO₂, and 90% humidity. Collect samples at the designated time points.

Washing Cells: Before collecting samples, wash the cells once with culture medium at 4°C.

Cell Sample Collection: After collecting the cells, fully lyse the cells with cell lysis buffer. Centrifuge at 12000rpm for 10 minutes and collect the supernatant.

Detection: Use liquid chromatography-high resolution mass spectrometry (LC-HRMS) to analyze and detect the concentration changes of Chenodeoxycholic Acid-d4 and its downstream metabolites labeled with (d4).

Precautions:

1) For your safety and health, please wear a lab coat and disposable gloves when operating.

References:

[1] Chang JH, Sangaraju D, Liu N, et al. Comprehensive Evaluation of Bile Acid Homeostasis in Human Hepatocyte Co-Culture in the Presence of Troglitazone, Pioglitazone, and Acetylsalicylic Acid. *Mol Pharm*. 2019 Oct 7;16(10):4230-4240.

Background

Chenodeoxycholic Acid-d4 is a bile acid analog labeled with deuterium (d4) and is commonly used as a substrate in targeted metabolomics. Chenodeoxycholic Acid-d4 can participate in the metabolic cycle of bile acids to reveal the mechanisms by which bile acids regulate cholesterol metabolism, lipid absorption, and energy balance^[1].

References:

[1] Mills KA, Mushtaq I, Johnson AW, et al. A method for the quantitation of conjugated bile acids in dried blood spots using electrospray ionization-mass spectrometry. *Pediatr Res*. 1998 Mar;43(3):361-8.

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