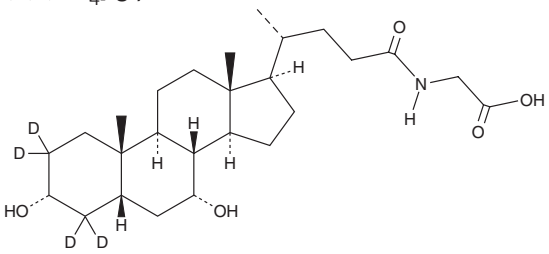
PRODUCT INFORMATION

Glycochenodeoxycholic Acid-d_4

Item No. 21890

CAS Registry No.: 1201918-16-2
Formal Name: N-[(3α,5β,7α)-3,7-dihydroxy-24-oxocholan-24-yl-2,2,4,4-d_4]-glycine
Synonym: GCDCA-d_4
MF: $C_{26}H_{39}D_4NO_5$
FW: 453.7
Chemical Purity: ≥98% (Glycochenodeoxycholic acid)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Glycochenodeoxycholic acid-d_4 (GCDCA-d_4) is intended for use as an internal standard for the quantification of GCDCA (Item No. 16942) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

GCDCA-d_4 is supplied as a crystalline solid. A stock solution may be made by dissolving the GCDCA-d_4 in the solvent of choice. GCDCA-d_4 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of GCDCA-d_4 in ethanol is approximately 1 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Description

An internal standard for the quantification of glycochenodeoxycholic acid (GCDCA; Item No. 16942) by GC- or LC-MS. GCDCA is a glycine-conjugated form of the primary bile acid chenodeoxycholic acid (Item No. 10011286).[1] It reduces formation of cholic acid (Item No. 20250) in primary human hepatocytes when used at a concentration of 100 µM.[2] GCDCA (50, 75, and 100 µM) reduces the number of LC3 puncta, a marker of autophagy, and is cytotoxic to L-02 hepatocytes.[1] GCDCA (50 µM) induces apoptosis in isolated rat hepatocytes, an effect that can be blocked by the protein kinase C (PKC) inhibitor chelerythrine (Item No. 11314).[3] Fecal levels of GCDCA are decreased in a rat model of high-fat diet-induced obesity compared with rats fed a normal diet.[4]

References

1. Lan, W., Chen, Z., Chen, Y., *et al.* Glycochenodeoxycholic acid impairs transcription factor E3-dependent autophagy-lysosome machinery by disrupting reactive oxygen species homeostasis in L02 cells. *Toxicol. Lett.* **331**, 11-21 (2020).
2. Ellis, E., Axelson, M., Abrahamsson, A., *et al.* Feedback regulation of bile acid synthesis in primary human hepatocytes: Evidence that CDCA is the strongest inhibitor. *Hepatology* **38(4)**, 930-938 (2003).
3. Gonzalez, B., Fisher, C., and Rosser, B.G. Glycochenodeoxycholic acid (GCDC) induced hepatocyte apoptosis is associated with early modulation of intracellular PKC activity. *Mol. Cell. Biochem.* **207(1-2)**, 19-27 (2000).
4. Lin, H., An, Y., Tang, H., *et al.* Alterations of bile acids and gut microbiota in obesity induced by high fat diet in rat model. *J. Agric. Food Chem.* **67(13)**, 3624-3632 (2019).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM