

PRODUCT INFORMATION



Chenodeoxycholic Acid-d₄

Item No. 20848

CAS Registry No.: 99102-69-9

Formal Name: 3 α ,7 α -dihydroxy-5 β -cholan-24-oic-
2,2,4,4-d₄ acid

Synonym: CDCA-d₄

MF: C₂₄H₃₆D₄O₄

FW: 396.6

Chemical Purity: \geq 95% (Chenodeoxycholic Acid)

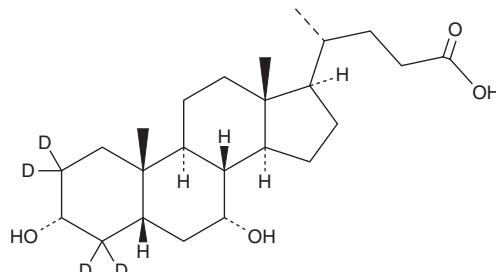
Deuterium

Incorporation: \geq 99% deuterated forms (d₁-d₄); \leq 1% d₀

Supplied as: A crystalline solid

Storage: -20°C

Stability: \geq 4 years



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

Laboratory Procedures

Chenodeoxycholic acid-d₄ (CDCA-d₄) is intended for use as an internal standard for the quantification of CDCA (Item No. 10011286) 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).

CDCA-d₄ is supplied as a crystalline solid. A stock solution may be made by dissolving the CDCA-d₄ in the solvent of choice. CDCA-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of CDCA-d₄ in DMF is approximately 30 mg/ml and approximately 20 mg/ml in ethanol and DMSO.

CDCA-d₄ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CDCA-d₄ should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CDCA-d₄ has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

CDCA is a hydrophobic primary bile acid.¹ It is formed from cholesterol in the liver via a multistep process catalyzed by the cytochrome P450 (CYP) isoforms CYP7A1, CYP8B1, and CYP27A1. CDCA is a farnesoid X receptor (FXR) agonist that binds to FXRs in a TR-FRET assay (EC₅₀ = 13 μ M) and induces FXR transactivation in a reporter assay.^{2,3} It induces transcription of the gene encoding the Nrf2 target glutamate cysteine ligase (GCL) in primary hepatocytes and HepG2 cells when used at concentrations ranging from 25 to 100 μ M.⁴

References

1. Fiorucci, S. and Distrutti, E. Chenodeoxycholic acid: An update on its therapeutic applications. *Bile acids and their receptors. Handbook of experimental pharmacology*. Fiorucci, S. and Distrutti, E., 1st edition, Springer (2019).
2. Ohinata, Y., Payer, B., O'Carroll, D., et al. *Nature* **436**, 207-213 (2005).
3. Urizar, N.L., Liverman, A.B., Dodds, D.T., et al. *Science* **296**(5573), 1703-1706 (2002).
4. Tan, K.P., Yang, M., and Ito, S. *Mol. Pharmacol.* **72**(5), 1380-1390 (2007).

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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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